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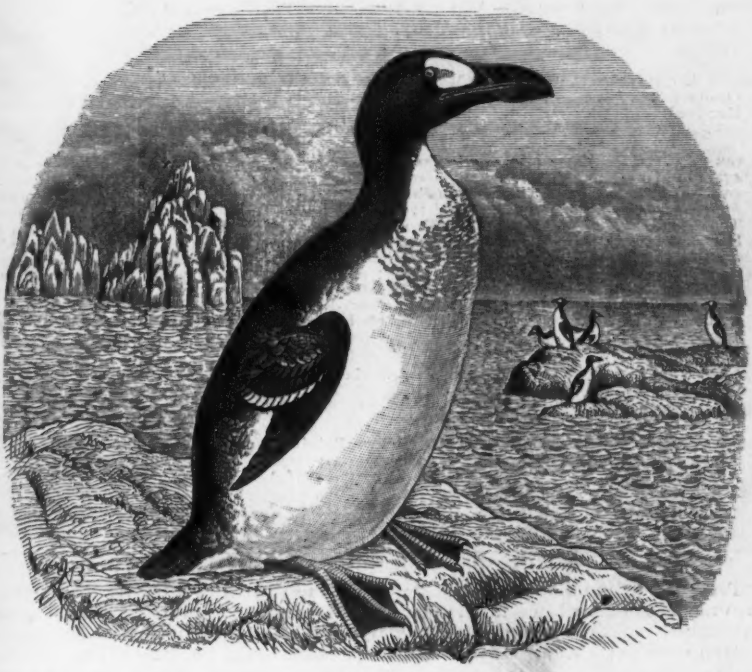

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CONTENTS.

PAGE.

THE PRESENT CONDITION OF SOME OF THE BIRD ROOKERIES OF THE GULF COAST OF FLORIDA. (Concluded.) By *W. E. D. Scott* 273

THE PINE FINCH (*Spinus pinus*) BREEDING AT CORNWALL-ON-HUDSON, N. Y. By *J. A. Allen* 284

THE AMERICAN CROSSBILL (*Loxia curvirostra minor*) IN LARGE NUMBERS NEAR CHARLESTON, S. C. By *Arthur T. Wayne* 287

BIRDS OF TOM GREEN AND CONCHO COUNTIES, TEXAS. (Concluded.) By *William Lloyd* 289

ADDITIONS TO THE AVI-FAUNA OF BAYOU SARA, LA. By *Charles Wickliffe Beckham* . 299

THE SIGNIFICANCE OF CERTAIN PHASES IN THE GENUS HELMINTHOPHILA. By *Spencer Trotter, M. D.* 308

THE BIRDS OF THE WEST INDIES, INCLUDING THE BAHAMA ISLANDS, THE GREATER AND THE LESSER ANTILLES, EXCEPTING THE ISLANDS OF TOBAGO AND TRINIDAD. By *Charles B. Cory* 311

SUMMER BIRDS OF SANTA CRUZ ISLAND, CALIFORNIA. By *Eli Whitney Blake, Jr.* . 328

DESCRIPTION OF A NEW SUBSPECIES OF JUNCO. By *Henry K. Coale* 330

ORNITHOLOGICAL CURIOSITIES.—A HAWK WITH NINE TOES, AND A BOBOLINK WITH SPURS ON ITS WINGS. By *Henry K. Coale* 337

RECENT LITERATURE.—Ridgway's 'Manual of North American Birds,' 333; Olphe-Galliard's Ornithology of Western Europe, 336; Minor Ornithological Publications, 337; Publications Received, 342.

GENERAL NOTES.—*Merganser americanus* Breeding in New Mexico, 344; The Clapper Rail again in Massachusetts, 344; *Ictinia mississippiensis* and *Ægialitis nivosa* nesting in Southern Central Kansas, 344; The Merlin (*Falco æsalon*) in Greenland, 345; Notes on *Melanerpes formicivorus bairdi* in New Mexico, 345; Egg-laying extraordinary in *Colaptes auratus*, 346; The Range of *Quiscalus major*, 346; The Lapland Longspur about Washington, D. C., 347; Descriptions of Two New Races of *Pyrrhuloxia sinuata* Bonap., 347; *Helinaia swainsonii* near Chester C. H., S. C., 347; Another Bachman's Warbler in Florida, 348; Additional Captures of *Helminthophila leucobronchialis*, 348; *Helminthophila leucobronchialis* in New Jersey, 349; The Canadian Warbler breeding in Pike County, Pa., 349; On the Correct Subspecific Title of Baird's Wren (No. 710*b*, A. O. U. Check-List), 349; Central New York Notes, 350; On the Western Trend of Certain Fall Migrants in Eastern Maine, 351; A Bird Scare, 351.

CORRESPONDENCE.—The Dermo-Tensor Patagii Muscle, 352; A Protest, 356; The Metric System, 357.

NOTES AND NEWS.—Obituary—Spencer Fullerton Baird, 357; A. O. U. and 'Auk' announcements, 359; Proposed Monument to Audubon, 359; Ornithological Work in Progress, 359; Annual Report of the Ornithologist to the Department of Agriculture for 1886, 360.

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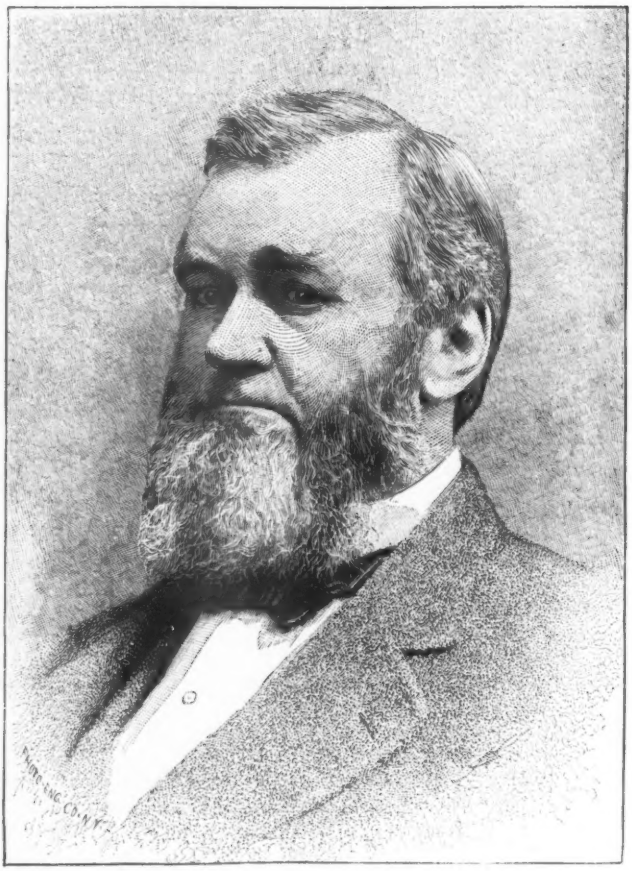

THE AUK:

A QUARTERLY JOURNAL OF

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VOL. IV. OCTOBER, 1887. No. 4.

THE PRESENT CONDITION OF SOME OF THE BIRD ROOKERIES OF THE GULF COAST OF FLORIDA.*

BY W. E. D. SCOTT.

Third Paper.

FRIDAY, May 21. To-day all the skins that had been collected were laid out to air and dry in the deserted houses of the fish ranch. These ranches, which are used only during a few months in the fall, are frequent on the islands and keys along this part of the Gulf Coast. Sometimes there is but a single building, and again the number of houses, if they may be called houses, amounts to a dozen or even twenty. They are all built of poles and beams, and the entire structure, walls as well as roof, is thatched with palmetto leaves. They afford very good shelter and are picturesque to a degree.

The point where we were stopping is known as the Champion Ranch, from the principal schooner which makes this a headquarters during the fishing season.

Shore birds of various kinds, several species of Terns, Laughing Gulls, and White and Brown Pelicans were common at Big Gasparilla Pass, a mile north of the ranch where we had anchored. The American Oyster-catcher (*Hæmatopus palliatus*) was one of the conspicuous species along the beaches and was

* Concluded from page 22

evidently breeding. Among the Terns I noticed *Sterna maxima*, *S. sandvicensis acuflavida*, *S. forsteri*, *S. hirundo*, *S. antillarum*, and *Hydrochelidon nigra surinamensis*. All of these were abundant save the Cabot's Tern, which was apparently rare, and most of the species, *S. antillarum* excepted, were in flocks and had not begun to breed. *S. hirundo* had, with few exceptions, not completed the moult, and the same observation applies to *S. forsteri*, a large proportion of each species being still in immature or winter plumage, or beginning to assume the breeding dress. Black Skimmers were rather common, in flocks of from twenty to as many as several hundred, and Laughing Gulls were very abundant, in large flocks, and mostly in immature or winter plumage, the birds with black heads being only occasionally seen. I also saw now and again the American Herring Gull, and rather more frequently a Ring-billed Gull (*Larus delawarensis*). Florida Cormorants were uncommon at this point, being mostly at the breeding grounds, and the only Ducks seen were a pair of Florida Ducks (*Anas fulvigula*).

Very large flocks of *Charadrius squatarola* were conspicuous among the beach-birds, and Wilson's Plover was also abundant, and either breeding or about to breed. Here, too, I noticed a considerable number of Roseate Spoonbills (*Ajaja ajaja*). But all the birds, though in such large numbers, were very wild; most of the day was spent in trying to get a White Pelican; three of us tried to stalk the birds, but they were so very wary, having evidently been much hunted, that we not only did not get any but could get no nearer than three hundred yards of them. All the other species were well acquainted with the shotgun and with man, and were as wild and shy as I have ever seen birds anywhere. At night, the skins already taken being well aired and dried, I determined to proceed in the morning to the next pass to the north of this one, namely Little Gasparilla.

Saturday, May 22. Leaving Champion Ranch early, and with a light, fair breeze, we were soon at Little Gasparilla. After an early dinner, leaving Dickinson on the 'Tantalus,' Captain Baker and Wilkerson went with me in the tender to explore the islands and keys of what is known as Kettle Harbor. This locality, once famous as the breeding ground of Herons and kindred birds of the region, is the next large bay north of Charlotte Harbor, and, though not more than four miles wide, is

probably about fifteen miles long, and dotted all over with keys of greater or less extent, some of which seemed to present all the conditions most likely to induce birds to resort to them. But though we carefully explored this entire region, up to Stump Pass and for several miles beyond, we found no inhabited rookery, and saw only a few straggling Herons or an occasional Fish-hawk or Kingfisher. At three points we found islands that had been in very recent times the breeding homes of Herons, Pelicans, and Cormorants, but they were absolutely deserted, and not so much as a single pair of Herons or other birds were found breeding at any of these places. Captain Baker had promised to show me a very large rookery on an island near Stump Pass, in this harbor, but on reaching the island we found it deserted, though it had evidently been in comparatively recent years the home of thousands of birds, for the evidences, in the way of excrement and fish skeletons, were to be seen all over the ground, and the old nests were in the trees by thousands. To make sure that birds did not roost here or at the other deserted rookeries in the harbor, we remained at a point where we could command a view of most of the ground until dark, and not a bird came to roost. By this delay we were so late in getting back to the narrow but long strait which connects Kettle Harbor with the waters above Little Gasparilla Pass that we found the tide so low we were obliged to remain in the small boat all night, the shore being nothing but mangrove swamps for a long distance back into the country.

Sunday, May 23. At daylight the tide had risen so that we began to make our way to the 'Tantalus.' In the afternoon we took the 'Tantalus' to another anchorage very close to the Pass, for I had determined to go north again as soon as the weather would permit.

Monday, May 24. The wind being directly ahead to-day and blowing hard, we remained at anchor and explored the neighboring beaches. The Captain found two lots of eggs of the loggerhead turtle on one of the beaches, which had been laid during the night. There were ninety odd eggs in one lot and upward of sixty in the other. Captain Baker told us that the business of hunting the loggerhead turtle for food, and also for the eggs, was carried on mainly during this time of the year, the breeding season, and that the number of turtles had been so

largely reduced in this way that it would be only a short time when it would be almost impossible to find a turtle where, a few years before, they had come to breed by hundreds.

The birds I observed here to-day were much the same as those already mentioned as found at the pass next below, except that Cabot's Tern seemed to be more common, and that during the several days of my stay here the Knot (*Tringa canutus*), the Red-backed Sandpiper (*T. alpina pacifica*), and the Sanderling (*Calidris arenaria*) were migrating north in flocks, which were constantly passing at short intervals throughout the day over the outer beach. Wilson's Plover, Least Terns and Willets were breeding in considerable numbers, especially the two former species, which were to be seen almost everywhere on the sands. The Turnstone (*Strepsilas interpres*) was also migrating north in flocks of from four to twenty and were quite abundant.

About four o'clock this afternoon a 'sharpie' schooner, some forty-five feet in length, came from the direction of Big Gasparilla Pass and anchored within two hundred feet of us. The crew to the number of four at once went on the beach and from the time they landed until dark there was a perfect fusilade. Going over to see what they were doing, I found that they were killing all kinds of shore birds and Least Terns. One of the men told me that this was Mr. Batty's boat, and that they were collecting birds for the 'plume market'; that Mr. Batty was down the beach shooting, and would be back for supper. They had bunches of Wilson's Plover (breeding), Least Terns, and various kinds of Sandpipers. These birds are skinned, partly filled out with cotton, and at once wrapped up in paper and packed away to be finished after reaching the North. They were killing and preparing by these methods, during the time I was near Mr. Batty's party, from a hundred to a hundred and fifty birds a day. I called on Mr. Batty later in the evening and learned something of his work.

Tuesday, May 25. This day was stormy with the wind fresh from the northwest. In the morning I went on the beach with Mr. Batty, and we shot Knots, Black-bellied Sandpipers, Sanderlings, and Turnstones over decoys, all these species being used by Mr. Batty in his feather business. At the same time two of Mr. Batty's men were killing Wilson's Plovers,

Least Terns, Boat-tailed Blackbirds, Gray Kingbirds, and any other small species that came in their way. The Least Terns are particularly in demand in the hat business, and Mr. Batty paid for such small birds as I have enumerated ten or fifteen cents each in the flesh. All Owls, and particularly the Barred Owl, are desirable. The feathers of these, as well as of Hawks, are bleached by processes that Mr. Batty described to me, and used for hats and other decoration. One of Mr. Batty's employes told me that they had left a party at the pass below, where they were killing the same kinds of birds, and that Mr. Batty was constantly purchasing and trading with native and other gunners for plumes and round and flat skins of all the desirable birds of the region. Not less than sixty men were working on the Gulf Coast for Mr. Batty in this way. From time to time, as we were together, I picked up these facts, and I have been careful to underrate rather than overestimate the destruction that was going on from this single source. I have been able, through parties working at various points between here and Cedar Keys, to very fully substantiate these statements.

Wednesday, May 26. This morning we started north again, leaving the party of plume hunters still killing beach birds and Least Terns at Little Gasparilla Pass. We went only a little way outside, as it proved to be very rough, and it was desirable to keep the material thus far collected in as good condition as possible. We went in at Kettle Harbor Pass and up through the same harbor already explored and described, stopping for the afternoon and night at Stump Pass, the upper outlet of Kettle Harbor.

On this beach we again found many eggs of the loggerhead turtle some of which — three or four out of the hundred obtained — had two yolks.

Thursday, May 27. Leaving Stump Pass early this morning with a light head wind, we went sixteen miles up the coast to a point known as Casey's Pass. As we left our anchorage I saw Mr. Batty's schooner headed to the northward, but it did not stop either at Casey's Pass or at Sarasota proper. At Casey's Pass we met a very intelligent man, a Mr. Frank Higel, who told me the same story of the extermination of birds that I had already heard so many times. He said that several years before, when he first came into this region, there were two large rook-

eries of Herons and kindred birds in the little harbor where we were now anchored, but they had been, as he termed it, 'broken up' by the efforts of various plume hunters, and that now it was almost impossible to find any Herons either breeding or roosting in the vicinity. He very kindly described an enormous rookery on the Manatee shore of Tampa Bay, at a point known as Bullfrog River, where he assured me thousands of birds had bred a few seasons before, and I determined to find the point from data and a rough map that he made for me of the region in question. The birds of this pass were about the same as I have already spoken of at Little Gasparilla, except that Knots did not seem so plenty, and Cabot's Tern was much more abundant. Many of these Terns (*S. sandvicensis acuflavida*) were observed in what seemed to be winter or immature plumage, and only now and then was an adult bird with a clear black cap observed. There may have been a hundred of this species fishing along the beaches and roosting in flocks on the sand points on either side of the pass. We did not notice any Herons, even at evening, when they are generally to be seen going to roost, though the country back of us seemed particularly adapted for breeding and roosting grounds.

Friday, May 28. It rained all this morning, but in the afternoon it was clear enough to go out on the beaches. Found the Cabot's Tern rather wild, but took nine in the course of the afternoon. Most of these are not in full plumage, but two of them are adult with very black caps and the plumage underneath of a most delicate blush-pink color, very like that seen on the feathers of the breast of the Roseate Tern, and occasionally in a high plumaged Laughing Gull. Here, too, were Forster's Terns in numbers, and *Sterna maxima*. These latter were about to breed, a female taken having eggs with shells almost formed. Some of the Cabot's Terns were moulting. Some of the Least Terns at this point had nests and others had not moulted out of the winter or immature plumage; and of the many *S. hirundo* seen and taken here, very few were in full plumage, most of them being moulting. All of the Forster's Terns were in the '*havelli*' plumage, and did not show any signs of moulting. From these data it is not improbable that many of the Terns, especially *S. hirundo* and *S. forsteri*, do not breed till after they are more than a year old; and I am inclined to think that this is also the

case with some of the commoner shore birds, notably *Macrorhamphus griseus* which I have seen in flocks of a dozen or more at John's Pass, on this coast, as late as June 20.

The migration of shore birds to-day was much the same as that noted at Little Gasparilla, Knots, Red-backed Sandpipers, Black-bellied Plovers and Sanderlings still going north in small flocks.

Saturday, May 29. At 10 A.M. to-day, the weather having cleared, we again started north and reached Big Sarasota Pass, where we went inside and anchored for the night. On the way we saw large flocks of Terns and Gulls, and all of the species spoken of above appeared to be quite abundant. This was marked in the case of Cabot's Tern, which was equally common with Forster's Tern. Other birds, such as Brown Pelicans and Man-o'-war Birds, were observed in very small numbers, and all of the species seen were wary and avoided as far as possible the vicinity of our boat. I learned from citizens at Sarasota that the bird rookeries, once so characteristic of the bay, were all deserted by their former occupants, the birds having been pursued without mercy by the plume hunters, and in all the cruising that I did in this bay I found no roosting or breeding places of Herons, Cormorants, or Pelicans.

Sunday, May 30. To-day was spent in cruising the shore of Sarasota Bay, which took all of the forenoon, and in the afternoon we were rnnning up the Manatee shore of Tampa Bay, trying to find the bird rookeries that Mr. Frank Higel had told us of at Casey's Pass. We went along this shore till almost dark, looking carefully for any signs of birds. By half-past five in the afternoon we were some eighteen miles from the mouth of the Manatee River, which we had passed at one o'clock. This was near our objective point, and if the countless birds described by Mr. Higel as formerly breeding in this vicinity were anywhere within five miles of us, I felt pretty confident of seeing some of them going to roost after sundown. As a matter of fact, I did see some half a dozen Herons and about fifty White Ibises, all of them flying so far back into the interior that I lost sight of them. If there was any large rookery on this shore I was unable to find it, though a good part of the morning of the 31st was devoted to a closer inspection, and we used the small boat to go nearer to the shores than we could get in the 'Tantalus.'

Monday, May 31. Spent most of the morning, from daylight until 11 A. M., in exploring the shores in the small boat, and not finding anything that indicated the presence of breeding birds in the vicinity we finally gave up the search. I afterward learned from Mr. Alfred Mears, of John's Pass, that formerly there had been a very considerable rookery at this point, which had suffered, as had the others of the region, from plume hunters, and had finally been totally abandoned by the hundreds of birds which once frequented this point. Giving up the search for the rookery here, I determined to go across Tampa Bay proper and examine three places where I had been six years before, in Old Tampa Bay, at each of which points all of the commoner Herons, Brown Pelicans, and Cormorants were then breeding by hundreds.

The first of these rookeries was at a place known as Papy's Bayou, and we reached here late in the afternoon, but though I looked the once familiar ground over carefully, I found only a few Green Herons breeding, and at dusk perhaps twenty American Egrets came in to roost. We remained at anchor near here all night, and the scarcity of birds was as marked as at any point we had so far visited.

Tuesday, June 1. To-day was spent in visiting the other two places where I had once seen birds so abundant. One of these points is known as the Double Branches, and the other as Rocky Creek. Formerly I had seen birds breeding here in great numbers, and Reddish Egrets had been the most conspicuous feature of these breeding grounds in those days. But now how different! Not a single pair of birds of any kind did I find nesting, and only at rare intervals were any kind of Herons to be observed. Not a single Brown Pelican or Cormorant was seen, though a little island at Rocky Creek had once been the nesting ground of many hundred of each species. Not a Reddish Egret and only a few frightened and wary Louisiana Herons were seen, and these were not breeding. At one point a flock of Roseate Spoonbills were feeding on a sandbar, but we did not get nearer than a quarter of a mile to them. Formerly I had seen many hundreds of these birds feeding and roosting in the vicinity of these rookeries, and they were then so tame and fearless that one could approach so as almost to touch the birds. Late in the day I determined to go to the town of Pinellas, which is on old Tampa

Bay, to learn anything I could from the people there in regard to the birds of the region. We reached the town about half-past five, and though all that I could get in the way of information was negative in character, yet I saw many flat skins of Florida Cormorants in one man's possession, and when I told him of the Rosy Spoonbills I had seen that morning, he would hardly believe me, as the birds had not been seen in the neighborhood for a couple of years.

Wednesday, June 2. Leaving the little town of Pinellas early this morning we rounded Point Pinellas, and again were cruising northward in the direction of Tarpon Springs. About three miles from the extreme end of Point Pinellas, in Boga Siega Bay, is the group of islands that once formed what is known as Maximo Rookery. These islands are so close together, being only divided by shoal and narrow streams of salt water at high tide, that practically they form a single low island. This is at least two hundred acres in extent, and is covered with a dense growth of the several kinds of mangrove and forms a point particularly attractive to birds either as a roosting or breeding place. I had been here six years before, and it fairly teemed with bird life then. Every tree and bush on this large area contained at least one nest, and many contained from two to six or eight nests whenever the size of the tree permitted. A perfect cloud of birds were always to be seen hovering over the island in the spring and early summer months, and conspicuous among them were Brown Pelicans, Man-o'-war Birds, Reddish Egrets, Florida Cormorants, Louisiana Herons, American Egrets, Snowy Herons, Little Blue Herons, Great Blue Herons, and both kinds of Night Herons. I have tried to give them in the order of their abundance, though it is difficult to say, in such an immense congregation, which species predominated. Beside, in comparatively smaller numbers, and yet by hundreds, were White Ibises and Rosy Spoonbills. So far as I was then able to determine, all these species bred here save the Roseate Spoonbill and Man-o'-war bird, the latter being present to prey on the Pelicans and Cormorants, taking from them, whenever possible, the food intended for the young birds. It was truly a wonderful sight, and I have never seen so many thousands of large birds together at any single point.

We anchored the sloop just off the island and I went ashore

to see what birds I might find. From the water, as we approached, only a few Cormorants were to be seen, possibly seventy-five in all, and though I spent several hours looking over the various parts of the island I found no other large birds breeding—absolutely not a single pair of Herons of any kind; five or six Louisiana Herons feeding on a small sand flat at one of the extremities of the island were all the Herons observed in the vicinity.

When I previously visited this point A. Lechevallier had located on the mainland about three-quarters of a mile away; here he had built a house and was killing birds on the island for the feather market. He or his assistants had then been there a little over a year, and I am told by persons living near, whom I have every reason to believe, that it took these men *five* breeding seasons to break up, by killing and frightening the birds away, this once incomparable breeding resort. Of course there were other plume hunters who aided in the slaughter, but the old Frenchman and his assistants are mainly responsible for the wanton destruction. He regarded this as his particular preserve, and went so far as to order outsiders, who came to kill Herons and other birds, off the ground. The rookery being destroyed, he had now given up his residence here.

In the afternoon we went on to John's Pass and stayed there for the night. A few pairs of Snowy Herons and quite a number of Louisiana Herons were breeding at the little rookery spoken of in the first paper of this series, the young birds being from a few days to a week or more old.

I learned from Alfred Mears, that J. H. Batty had only just left here, he having killed many birds on the beaches, and quite a number at this rookery, and that he had offered to buy Heron's plumes, at stated prices each, from any of the residents who would collect for him.

Thursday, June 3. To-day I spent on the beach to the south of the pass, where I found all the Terns before enumerated in great numbers, particularly *Hydrochelidon nigra surinamensis* and *Sterna sandvicensis acuflavida*. Of this latter species I collected a fine series of some sixty birds, and took a few specimens, for comparison, of each of the other kinds. I hope at some future time to discuss the conditions of plumage of the species obtained this day in detail.

Beside the Terns, all of the species of beach birds spoken of at Little Gasparilla and Casey's Passes were observed here, migrating north in small flocks, but the aggregate would mount up to large numbers; and I can not but confess my surprise at this flight, so late in the season, of species that breed so very far north.

I met at this point a Mr. Edward Curry, whose post office address is Bonifacio, Hillsboro County, Florida, who confirmed very fully all that I had ascertained in regard to the destruction of birds during the breeding season on this coast.

Friday, June 4–Sunday, June 6. After leaving this pass on Friday our journey back to Tarpon Springs was uneventful, and I have fully discussed the ground we went over in the first paper of this series. We reached Tarpon Springs early on Sunday morning. As a result of this five weeks' cruise I had collected in all about two hundred and fifty birds, which have already been spoken of in detail.

At Tarpon Springs I learned that J. H. Batty was at Trouble Creek, a point six miles north of here, and later the men who had killed birds for him there, told me that he bought all the birds they could kill for him, except White Ibises. These included the more common of the smaller land birds, which were apparently as desirable as the water species. He took all Hawks and Owls, and also the Florida Quail. The prices paid for these birds in the flesh ranged from ten cents up to as high as seventy-five cents, and even a dollar for some kinds, such as the Great Blue Heron.

The facts I have presented in these papers have been mainly derived from my personal observation, and I have carefully avoided giving any information supplied from outside sources unless I felt sure that it was to be relied upon.

It is scarcely necessary to draw any conclusions or inferences. This great and growing evil speaks for itself. I have the name and addresses of some fifty dealers in various towns in Florida and the principal cities of the country. Merchants in New York and other centres are buying every month the skins and plumes of Florida birds. The price paid for such material, notwithstanding the efforts made to create sympathy for the birds, and a feeling against using the feathers for hats and other decorative purposes,

is each year becoming higher, showing how great is the demand and how profitable the traffic is to these men-milliners.

[ERRATA.—The first two papers of this series were published without the author being able to revise the proofs. He now sends the following list of errata:

Page	138,	line	24	for	Boya Sieya	read	Boga Siega.
"	138,	"	28	"	Lechvallier	"	Lechevallier.
"	213,	"		"	Nyakka	"	Myiakka.
"	215,	"	6	"	Rossa	"	Rassa.
"	216,	lines	7, 24, 40	for	Rossa	"	"
"	221,	"	17, 20, 23, 25, 29, 35	for	Rossa	"	"
"	221,	"	29	for	we	"	he.
"	221,	"	27	"	Myakka	"	Myiakka.
"	222,	"	6	"	"	"	"

Also in the Paper entitled 'Some Rare Florida Birds,' Punta *Rossa* on pages 133 and 134 should read Punta *Rassa*.—EDD.]

THE PINE FINCH (*SPINUS PINUS*) BREEDING AT CORNWALL-ON-HUDSON, N. Y.

BY J. A. ALLEN.

ON April 20, 1887, I went to Cornwall-on-Hudson, Orange Co., N. Y., where I remained till May 12, making my home at the residence of Mr. Daniel Taft. The house is in the midst of a lawn of several acres in extent, well set with fruit and shade trees, overlooking the Hudson.

On the day of my arrival a small flock of Pine Finches, busily hunting food in the pines and spruces, attracted my attention, but as the season was late and the weather still cold it was not, of course, a noteworthy occurrence. They continued to haunt the vicinity for several days, when all disappeared except a single pair. On the morning of May 3, I was surprised to see one of the birds gathering material for a nest. She was easily traced to the lower branch of a Norway pine, scarcely thirty feet from the piazza, and almost within reach of a little summer house overrun with a wisteria vine. The site chosen for the nest was the extremity of the branch, about eight or ten feet from the ground, and well concealed. Several times the little builder carried material to the nest while I was sitting in the arbor, almost within reach of it. Although I afterward carefully kept away, the birds seemed not fully satisfied with the exposed situ-

ation, and after the second day I noticed that nothing seemed to be added to the structure, and my fears that they had abandoned it proved true. Still the birds were about, and the female was often observed with bits of nest-material in her bill. A little patient watching disclosed the fact that a new nesting-site had been chosen,—this time the extremity of an upper branch of a neighboring Norway pine, about thirty-five feet from the ground, and about the same distance from the much frequented piazza of the house. As it was on the side of the tree toward the house, and nearly on a level with the windows of my room, I had a fine opportunity of watching the industrious little architects, although the nest itself was completely hidden from view by the dense pine needles in which it was placed.

One of the birds, presumably the female, did all the work, but was escorted to and from the nest by the male, who further manifested his interest and joy by a profusion of Canary-like *twee-e-ts* and other peculiarly sweet and pleasing notes. Later the birds were more silent and much less frequently seen;—it was evident that incubation had begun. Here was certainly a prize, which, in view of all the circumstances, it seemed hardly right to ignore; for the nests and eggs of the Pine Finch are by no means easy to discover, are still rare in collections, and the breeding of the species so far south of its usual summer home a noteworthy event; yet it required no slight struggle with tender feelings to decide to break up the happy home, even in behalf of science, and of the museum whose ornithological interests I may be supposed to have deeply at heart.

On May 12 I enlisted the services of my young nephew, R. T. Swezey, who kindly ascended to the nest on a tour of observation, finding, as was anticipated, a full clutch and the female sitting. She remained on the nest till his hand touched the branch on which the nest rested, when she flew off with a great outcry and dashed frantically about for some seconds, passing and repassing within a few yards of the nest, uttering such plaintive notes of distress as to make the task of securing the prize indeed a sad one. The nest was placed at the base of a bunch of cones within a few inches of the extremity of the branch, and being thoroughly shielded on all sides by the strongly resisting, long, sharp needles, it was no easy matter to reach out to the nest and, inserting the hand, safely remove the coveted treasures. The four

eggs were, however, secured without accident, the nest was removed *in situ* by taking with it the supporting branch; the male joined his mate in her distress and both were shot and, with the nest and eggs, added to the oölogical rarities of the American Museum of Natural History, where, in due time, they will form one of the attractive 'Bird Groups' of the exhibition collection.

The four eggs measure (in millimetres) as follows: 18×12.5, 18×12, 18×12, 17×11. The ground color is pale bluish white in all, but the markings vary greatly. In one the greater part of the surface is marked with sharply-defined dots and specks of dark reddish brown, but more thickly aggregated about the larger end. In another the spots are larger, fewer and paler, and more vinaceous in tint, and are mostly on one side of the egg near the larger end. In a third the markings, which nearly cover and are mostly confined to the larger end, are pale, not well defined, and vinaceous brown; beside these are several conspicuous blotches of blackish brown, the largest of which is near the larger end of the egg. In the remaining egg the markings form a single narrow streak of sienna brown nearly encircling the egg at its thickest point; it begins in a coarse blotch of blackish brown, from which proceeds a narrow line encircling the egg, becoming narrower and paler as it advances, and finally quite indistinct, it much resembling the narrow pencillings seen in the eggs of many Orioles. This egg in respect to markings is as different from the egg first described as are the eggs of the Field Sparrow and Chipping Sparrow.

The nest is well-built, neat, and compact, and quite large for the size of the bird. It measures 57 mm. (2¼ inches) in inside diameter, 90 mm. (3½ inches) in outside diameter, and 37 mm. (1½ inches) in depth (inside measurement). The base of the nest is formed of string, thread, a long piece of tape, and rootlets woven into the pine needles on which it rests, some of the strings and the tape being looped about and bound to the clusters of needles. On this rests a cup-shaped structure of coarse and fine rootlets and soft vegetable fibre, lined with black horse-hair.

The nest found by Dr. A. K. Fisher at Sing Sing, N. Y. (Bull. Nutt. Orn. Club, VIII, 1883, p. 180), and the one found at Cambridge, Mass., in May, 1859, are, so far as I am aware, the only recorded instances of the breeding of this species south of the Canadian Fauna.

THE AMERICAN CROSSBILL (*LOXIA CURVIROSTRA MINOR*) IN LARGE NUMBERS NEAR CHARLESTON, S. C.

BY ARTHUR T. WAYNE.

It will doubtless be interesting to the readers of 'The Auk' to know that the Red Crossbill has been very abundant at McPhersonville, a beautiful little village four miles from Yemassee and about sixty miles from Charleston, during the months of November and December, 1886, and January and February, 1887.

The first intimation I had of the bird in question as having been captured near Charleston was from my friend Dr. G. E. Manigault, the well-known osteologist, who called to tell me of the good news on Sunday evening, in the early part of January, 1887. Dr. Manigault received a very fine adult male from a gentleman at McPhersonville, to whom is due the credit of adding the Red Crossbill to the birds of South Carolina.

This gentleman is W. D. Gregorie, Esq., who has observed the habits of birds around Yemassee and vicinity for years, and is a great enthusiast in matters pertaining to ornithology, and whose knowledge of the birds of that region is very great.

I wrote Mr. Gregorie, in the latter part of January, to secure specimens of the Crossbill for me, and after the lapse of a few days I received from him three fine specimens, a male and two females. I therefore resolved to explore the country around Yemassee for a day, with the hope of seeing the bird alive, and left Charleston on January 28. The result of this day's trip rewarded me by the capture of a female, which I shot out of a pine tree one hundred feet high; the bird was feeding on a burr. I also had the pleasure of seeing a large flock of about twenty individuals. I secured during my stay only a single example. Although I was somewhat discouraged, I did not give up hope, but determined to visit Yemassee again and explore the country thoroughly.

During my stay at Yemassee, from February 5 to 14, I was the guest of Mr. Gregorie, and he took me to the best localities where I would be sure to get the Crossbills. My stay was a very pleasant and satisfactory one and I will give the result in detail: On February 7, I shot thirteen examples, five

males, and eight females; on February 9, four males; on February 11, a male and a female; February 12, four males. The result of my collecting was twenty-three examples,—fourteen males, and nine females. I studied with much care the habits of the Crossbill.

They go in flocks of from six to forty individuals, and fly in the manner of the American Goldfinch (*Spinus tristis*), but their flight is generally very high and greatly protracted; their note while on wing is very similar to the cry of young chickens. They always alight in the tops of the pines, and each individual then gets a burr, to see if it contains 'mast.' I have seen as many as three birds on one burr. I shot several out of a tree, and the rest did not even take wing but kept on feeding. They frequent only the pine woods, and feed wholly on the seeds contained in the burrs of the long-leaved and short-leaved pines. I examined the crops of every bird I killed, and found them crammed with the seeds of the pine.

I have shot them from the tops of the dead pines, among the burrs; but they rarely resort to the dead pines unless they are frightened by Hawks.

The Crossbills were at Yemassee in large numbers—over a thousand—where they arrived about the last of November, and were still there as late as February 15.

The weather for a week in February was very hot and sultry, the thermometer registering 80° in the shade for several days, and in the sun would probably have reached 90°, but Crossbills were then as thick as Blackbirds. The only reason I can see for their remaining there for so long a time is that the 'mast' was to be found in abundance.

I cannot refer to a single record of the occurrence of this bird in South Carolina, much less on the sea-board, except that given by Audubon, who refers to one shot out of a flock near Charleston by his son. This, so far as I am aware, is the only record for South Carolina, save the one I give.

The credit of adding this bird to the fauna of South Carolina is due to Mr. Gregorie, for had he not shot and sent the specimen to Dr. Manigault, I would never have had the pleasure of making the present record.

Mr. Gregorie says that the Crossbills were abundant at Yemassee in the winter of 1872 or 1873, but were not in such num-

bers as they have been this year. He also adds that he has not seen them until this winter since they appeared in 1872 or 1873.

My series of specimens from Yemassee embraces twenty-nine examples, representing every stage of variation.

Since writing the foregoing I visited Yemassee again, and on April 1, 1887, one of my collectors shot thirteen specimens; on April 2 I shot a single specimen; again on April 4 my collector brought me ten specimens. The number of specimens killed in April was about thirty, as several were thrown away being in poor plumage.

I visited Yemassee again in May and found the Crossbills still there, but not in such numbers as in April. My collector brought me a female on May 6, and a male on May 19. These two specimens were the only ones taken in May. The Crossbills were seen for the last time on May 22, but I am under the impression that some of them remained until the first of June, when they all left for their breeding grounds in the mountains.

I am positive that none of the Crossbills bred at Yemassee, as the ovaries in the females were about the size of No. 10, shot in April and May and all the previous months.

The Crossbills were not confined to Yemassee and vicinity alone, for they were shot at Hampton C. H., and at Brunson, in Hampton County. My opinion is that they were scattered all over Hampton County.

The departure of the Crossbills late in May to their breeding grounds may prove that the Crossbills which breed in the mountains of North Carolina do not breed until the summer, and, curiously enough, in this respect are very different from the Crossbills of the North, which breed in the winter and early spring months.

BIRDS OF TOM GREEN AND CONCHO COUNTIES, TEXAS.

BY WILLIAM LLOYD.

(*Concluded from p. 193.*)

133. **Cyanocitta cristata.** BLUE JAY. — Abundant in Zavalla and Dimmit Counties, near Eagle Pass, on the Rio Grande. Its limit to the

west seems to be near the mouth of the Main Concho, where it is tolerably common. Seen in northern and western Concho County only in the fall. Does not occur in Tom Green County, where it is replaced by the next species.

134. **Aphelocoma woodhousei.** WOODHOUSE'S JAY. — Resident wherever there is shin-oak, at the heads of nearly all the creeks. Tolerably common. Nest with three eggs found April 19, 1885, on Spring Creek, in low underbrush; and another, same date and position of nest, with three young.

135. **Corvus corax sinuatus.** AMERICAN RAVEN. — Occasional visitor at all times of the year, both in Concho and Tom Green Counties. Nest with six eggs found May 15, 1883, in mesquit.

136. **Corvus cryptoleucus.** WHITE-NECKED RAVEN.—Resident; abundant at times. The bulk retire in fall in large flocks down the Pecos and Devil's Rivers, where they winter by thousands. A nest with six eggs found May 19, 1882, in a low hackberry; another nest, partly finished, was found May 13, 1883, and a third, with three eggs, May 5, 1885, in low mesquits.

137. **Corvus americanus.** AMERICAN CROW. — Abundant in summer. Breeds in colonies, in the eastern part of Concho County, the beginning of May.

138. **Molothrus ater.** COWBIRD.—Spring and fall, in migration.

139. **Molothrus ater obscurus.** DWARF COWBIRD. — Abundant in summer. Lays in the nests of Vireos, Nonpariels, Orchard Orioles, etc.

140. **Xanthocephalus xanthocephalus.** YELLOW-HEADED BLACKBIRD. — Abundant spring and fall migrant. A flock seen June 25, 1886, in Pecos County.

141. **Agelaius phœniceus.** RED-WINGED BLACKBIRD. — Abundant spring and fall migrant. Wintered the present year in large numbers in Concho County, for the first time (except stragglers)—a fact attributable to the greater area in cultivation in this locality, this area increasing year by year and exercising an appreciable effect on the bird life. The males keep in separate flocks with the young males; a few of the latter, however, are found with the females.

142. **Sturnella magna.** MEADOW LARK. — Abundant during migrations.

143. **Sturnella magna neglecta.** WESTERN MEADOW LARK. — Resident. Especially abundant in fall and winter. Nest generally in a rabbit form. In 1882 nests were found March 27, two eggs, and April 15, five eggs; in 1883, April 24, five eggs; in 1885, May 10, five young.

144. **Icterus spurius.** ORCHARD ORIOLE.—Abundant in summer. The males arrive about April 13, followed by the females four or five days later. Common on April 21. The males depart very early; none noted for four years after August 5, while the females and young are noted from September 4 to 15. Breeds in hanging nests on mesquits. Earliest clutches May 19 (four eggs), and June 1 (five eggs).

145. **Icterus bullocki.** BULLOCK'S ORIOLE.—Tolerably common, espec-

ially on the main streams. I noted a male, evidently a straggler, April 6. The ordinary date of arrival is April 15 to 20, the birds becoming common about April 24. The females are very retiring. The males are seen with the family as late as September 30. Breeds on the top branches of the mesquit. Nest similar to that of the last; both elaborately woven out of horse-hair and lined with wool. A sprig of mistletoe is generally woven into one side of the nest. Clutches found May 15, two; May 16, six; May 28, five, and June 1, six. In all except two the clutch was six, the others having respectively five and four.

146. **Scolecophagus cyanocephalus.** BREWER'S BLACKBIRD. — Fall migrant, wintering occasionally in Tom Green County. Abundant in winter further south, in the Neuces Cañon.

147. **Quiscalus quiscula æneus.** BRONZED GRACKLE. — Abundant spring and fall migrant. Some specimens can hardly be separated from eastern ones. A few winter in Tom Green County.

148. **Carpodacus purpureus.** PURPLE FINCH.—One specimen, shot by Mr. Loomis, October 20, 1886.

149. **Spinus tristis.** AMERICAN GOLDFINCH. — Common in fall, arriving middle of August.

150. **Spinus psaltria.** ARKANSAS GOLDFINCH. — Rare fall migrant. Taken on South Concho, end of August.

151. **Rhyncophanes mccownii.** MCCOWN'S LONGSPUR. — Abundant winter visitor. Arrives November 5, leaves in March.

152. **Poocætes gramineus.** VESPER SPARROW. — Tolerably common in fall, in eastern part of Concho County.

153. **Poocætes gramineus confinis.** WESTERN VESPER SPARROW. — Resident. Tolerably common in winter in old cane fields. Nearly all leave in spring, but are probably common in the western half of Tom Green County. Nest found on the Plains May 16, 1885, with four eggs. In fall, in flocks on the Plains; in winter in pairs.

154. **Ammodramus sandwichensis alaudinus.** WESTERN SAVANNA SPARROW. — Resident. Tolerably common. No nest identified with certainty. Found near cultivated fields, and in marshy or boggy land.

155. **Ammodramus bairdii.** BAIRD'S SPARROW.—Rare fall visitor, shot in cane fields. Winters abundantly west of Tom Green County.

156. **Ammodramus savannarum perpallidus.** WESTERN GRASSHOPPER SPARROW. — Resident. Tolerably common in Concho County in fall; at other times rare. Two nests found at the edge of the Plains in Tom Green County; one May 17, 1885, with four eggs; the other May 22, 1885, four eggs.

157. **Chondestes grammacus strigatus.** WESTERN LARK FINCH. — Abundant summer visitor. Arrives in flocks March 24, earliest noted; departs October 8. Migrants pass through from October 25 to November 5. Breeds April 26 to June 5. Raises two broods. Clutch 4-5. Nest in bushes or on the ground.

158. **Zonotrichia querula.** HARRIS'S SPARROW.—Rare fall migrant in eastern Concho County.

159. **Zonotrichia leucophrys.** WHITE-CROWNED SPARROW. — Abundant winter visitor, in Concho County. Arrives the middle of October and remains until May. Frequently found in immense flocks. In song all winter on sunny days.

160. **Zonotrichia intermedia.** INTERMEDIATE SPARROW. — Common winter visitor in Tom Green County; tolerably common in Concho County. Arrives same time as the last in small flocks of six to twelve.

161. **Spizella socialis.** CHIPPING SPARROW.—Tolerably common in small flocks of four to six in Concho County, in fall and early winter. A few remain until spring.

162. **Spizella socialis arizonæ.** WESTERN CHIPPING SPARROW. — Resident in Tom Green County. Tolerably common in winter; rare in summer. Breeds. A nest, the only one met with, found on Spring Creek, May 8, 1885, in a low chapparal bush, contained four eggs fully incubated.

163. **Spizella pallida.** CLAY-COLORED SPARROW.—Abundant in spring and fall.

164. **Spizella breweri.** BREWER'S SPARROW. —Tolerably common in Tom Green County in fall. Winters in abundance in Pecos County.

165. **Spizella pusilla.** FIELD SPARROW. — Tolerably common in small flocks of from four to five in fall; rare in winter. Not noted in Tom Green County.

166. **Spizella pusilla arenacea.** TEXAS FIELD SPARROW.—Rare in fall and winter in Tom Green and Concho Counties.

167. **Junco hyemalis.** SLATE-COLORED JUNCO. — Common in winter. Arrives middle of October and remains until end of March.

168. **Junco hyemalis oregonus.** OREGON JUNCO.—Tolerably common in Tom Green County in winter. Occurs on the Main Concho in Concho County, in limited numbers.

169. **Amphispiza bilineata.** BLACK-THROATED SPARROW. — Common resident This species has extended east within the last six years to the Colorado River. Breeds, raising two broods. Nests in cat-claw or chapparal bushes. Nests found May 6, May 13, June 12, July 13. The eggs have a bluish tinge until blown, when they become pure white. A voluable and pleasing songster. Sings about noon every day after middle of March.

170. **Peucæa æstivalis bachmanii.** BACHMAN'S SPARROW. — Summer visitor in eastern Concho County. Nests found May 20 to June 1; eggs invariably four.

171. **Peucæa cassini.** CASSIN'S SPARROW.—Common summer visitor in Tom Green County, and tolerably common in Concho County in fall. Breeds on the Plains at the head of Spring and Dove Creeks. Four nests, found May 25, 27, and 29, had five eggs in each. Nests in low bushes, not higher than one foot from the ground, or in tufts of grass. A remarkable songster during the breeding season. Like the last species, it ascends in spirals about twenty feet, singing, the apex of its flight marking the termination of its song. Alights often on the same bush and again soars.

172. **Melospiza fasciata.** SONG SPARROW. — Tolerably common in winter in Tom Green and Concho Counties.

173. **Melospiza lincolni.** LINCOLN'S SPARROW. — Tolerably common during spring and fall migrations from the Pecos east to Colorado. Lingers in cane fields until Christmas.

174. **Melospiza georgiana.** SWAMP SPARROW.—Rare in spring migration in Concho County. Winters on the edge of the Plains at the head of the South Concho (Tom Green County).

175. **Pipilo erythrophthalmus.** TOWHEE.—Occasional winter visitor in Tom Green and Concho Counties. Two were shot in January, 1884.

176. **Pipilo maculatus arcticus.** ARCTIC TOWHEE. — Winter visitor. Tolerably common in suitable places. Arrives October 8, and remains until the first week in May.

177. **Pipilo fuscus mesoleucus.** CAÑON TOWHEE.—Resident and tolerably common in Tom Green County. Mr. Loomis shot three in the fall of 1886 in Eastern Concho County. Nest with three incubated eggs, in fork of small live oak in Tom Green County, found April 12, 1885. Nests found further west contained five eggs, so three is an exception. The A. O. U. 'Code and Check-List' gives its habitat as "Valley of Upper Rio Grande"; it should now include Valley of the Conchos to Colorado River. Heard its song only once, August 12, 1884.

178. **Pipilo chlorurus.** GREEN-TAILED TOWHEE. — This bird must be spreading east, as I see it as far east as the head draws of the Middle Concho. Common on the east side of Pecos River. Probably breeds.

179. **Cardinalis cardinalis.** CARDINAL. — Abundant resident. Very small flocks of this species are found in the river bottoms in winter. None seen west of the head draws of the creeks that rise in the Plains. Raises two broods. Earliest clutch found April 7; latest June 30.

180. **Pyrrhuloxia sinuata.** TEXAN CARDINAL. — Accidental visitor in Tom Green County. One was shot in May, 1885. I hear they occur in winter in the eastern part of Concho County, but have not seen them.

181. **Habia melanocephala.** BLACK-HEADED GROSBEAK. — Rare summer visitor; probably breeds. Shot a male August 5, 1886, in Concho County. No nests found. This supplements Mr. Geo. H. Ragsdale's record of one observed in spring at Colorado City, on the Texas and Pacific Railroad.

182. **Guiraca cærulea.** BLUE GROSBEAK.—Tolerably common migrant in fall, from the Pecos River to the Colorado River; breeds abundantly further west.

183. **Passerina cyanea.** INDIGO BUNTING.—Rare fall migrant in Tom Green County. One was observed June 5, 1883, in Concho County.

184. **Passerina ciris.** PAINTED BUNTING.—Common summer visitor. Raises two broods. Nests found from May 12 to July 14. Clutch 4-5. Builds generally in hackberry, but often in cat-claw and chapparal. The males arrive April 27 to 30 in small flocks. One female recorded April 19, 1885, but for two other years the females came after the males. A well known and delightful songster. The young female does not assume full plumage until the second year.

185. **Spiza americana.** BLACK-THROATED BUNTING. — Abundant spring and fall migrant. Appears in wandering flocks through the summer, but I know of no instance of its breeding. This is another bird, which, like the Black-throated Sparrow, six years ago scarcely known, is now abundant.

186. **Calamospiza melanocorys.** LARK BUNTING. — Abundant in winter in immense flocks. Arrives the beginning of November and stays until the first week in March. Frequents grain fields.

187. **Piranga ludoviciana.** LOUISIANA TANAGER. — A male was shot by Mr. Cope in the spring of 1886 in South Concho.

188. **Piranga erythromelas.** SCARLET TANAGER.—Accidental in Tom Green County in the spring of 1885. Described as being tolerably common in spring migration, in eastern Concho County.

189. **Piranga rubra.** SUMMER TANAGER. — Tolerably common summer visitant. Males arrive April 6; the females April 24. Breeds. No nest found before June 3, and June 6. Nest, like the Cardinal's, generally made on a branch of a low pecan on the main streams; never away from the water. Departs September 10.

190. **Progne subis.** PURPLE MARTIN. — Common summer visitant in suitable places. Breeds about the towns in colonies. Arrives the last of February; departs November 1.

191. **Petrochelidon lunifrons.** CLIFF SWALLOW. — Common summer visitant. Arrives early in April. I believe they raise two broods. Sometimes breed in barns. First nest, found under a bluff, May 4, with three eggs; another July 20, with four fresh eggs.

192. **Chelidon erythrogaster.** BARN SWALLOW. — Common summer visitant. Breeds about settlements, raising two broods. Nest with four eggs found August 1, 1883, at Paint Rock, Concho County.

193. **Tachycineta thalassina.** VIOLET-GREEN SWALLOW. — Fall migrant in Concho County; observed and taken September 1, 1885; seen October 1, 1886. Not recorded in Tom Green County.

194. **Clivicola riparia.** BANK SWALLOW. — Rare fall migrant in Concho County.

Swallows are numerous in fall (September to end of October), but as they often fly at great heights, it is impossible to procure or identify them.

195. **Ampelis cedrorum.** CEDAR WAXWING.—Abundant in fall and again in spring. A few winter, feeding on the mistletoe berries — about the only berry left after January 1. Winter all over Western Texas. One shot in the fall of 1886 had orange tips to the tail-feathers.

196. **Lanius ludovicianus excubitorides.** WHITE-RUMPED SHRIKE. — Abundant resident. Nests found from April 27 to May 21. Clutch six (in rare instances five). I first heard its song in September, 1884, and could hardly imagine the vocalist was a Shrike. Its song is a very pleasing one, in a minor key, as if practising. Since that date I have heard it frequently in the fall, from September to the middle of November. It is also an accomplished mimic, imitating *Sturnella magna neglecta* perfect-

ly. It lives on grasshoppers when it can procure them, and in winter, when the weather is severe, takes to carrion. I found one in January, 1884, so gorged from feeding on a dead sheep that it could not fly. In the Davis Mountains it lives in winter on large coleoptera. In spring it occasionally kills birds. I have seen *Spizella socialis arizonæ*, *Vireo belli*, *Polioptila cærulea*, and others, amongst its victims, and in summer it has a fancy for nestlings. It is usually very tame.

197. **Vireo olivaceus.** RED-EYED VIREO. — Abundant summer visitor in Tom Green County. Only noted during the fall migration in Concho County. Arrives April 11, after the Black-capped Vireo and on the same day as Bell's. Comes in pairs; nest found May 6, 1885, with six eggs. A pleasing songster.

198. **Vireo gilvus.** WARBLING VIREO. — Rare spring migrant. Not noted in Concho County.

199. **Vireo atricapillus.** BLACK-CAPPED VIREO. — Tolerably common in Concho County, during the fall migration. Breeds in two localities in Tom Green County. The males arrive April 6, the females the 7th. Though silent on arrival, by the 10th the famous song of the male is heard, and is continued through the summer until the middle of August. The song is loud, clear, and very musical, and the singer generally selects some blasted pecan stump for the site of his vocal efforts. The female has also a song, sweet, but not particularly noticeable. This joyous habit led me to look for the vocalist, April 28, 1885, and I soon discovered him sitting on a nest just completed. I found three other nests in the same way. The nest was always in some low tree at the edge of thick shrubbery, and is at once distinguishable from that of Bell's Vireo, which breeds in the same vicinity, in that the latter is lined with wool, while the Black-cap's is not. The eggs are pale white, as stated by Dr. Coues and others, and a full clutch is 4-5. Leaves Tom Green County altogether from August 20 to 25, but lingers in Concho County until the last week in September. This record fills part of the gap between Mr. Nathan C. Brown's record at Boerne, Mr. Ragsdale's in Cook County, and Col. Goss's in Kansas.

200. **Vireo noveboracensis.** WHITE-EYED VIREO. — Fall migrant. Two secured in Concho County, October, 1886. The eyes were pink in the specimens shot.

201. **Vireo belli.** BELL'S VIREO. — Abundant summer visitant. Arrives about the same day as the Red-eyed Vireo, and stays until the middle of September. Raises two broods. Nests found May 6 to July 6. Average clutch, six. One nest found May 8, 1884, had eight eggs. A tireless songster, but there are so many fine singers in this district that it does not attract much attention.

202. **Mniotilta varia.** BLACK-AND-WHITE WARBLER. — Common during migrations. Arrives April 12-13; departs September 12-14. I believe some breed, as I have seen them in June, but as they frequent the main stream, it would be only by chance that their nest could be found.

203. **Helminthophila ruficapilla gutturalis.** CALAVERAS WARBLER. — This western representative of the Nashville Warbler is abundant in fall,

with the Orange-crowned; seen on the Plains with Bell's Vireo, Blue Grosbeak, etc., in October, 1885.

204. **Helminthophila celata.** ORANGE-CROWNED WARBLER. — Abundant in the fall migration (may be var. *lutescens*).

205. **Helminthophila peregrina.** TENNESSEE WARBLER. — Early fall migrant in Tom Green County. Tolerably common.

206. **Dendroica æstiva.** YELLOW WARBLER. — More abundant than all the other Warblers together in spring and fall. A few may breed, as I have seen them during all the summer months.

207. **Dendroica coronata.** MYRTLE WARBLER. — Spring migrant. Tolerably common, May 13.

208. **Dendroica auduboni.** AUDUBON'S WARBLER. — Tolerably common spring and fall migrant. Arrives in spring, May 13. In fall I saw it in crossing the Plains the first week in October, and shot two from a flock as late as October 20, 1886, in Concho County.

209. **Dendroica cærulea.** CERULEAN WARBLER.—Saw small flocks of five to eight in crossing the Plains, the middle of October, 1885.

210. **Dendroica chrysoparia.** GOLDEN-CHEEKED WARBLER. — One was shot in a hackberry in April, 1887. Its stomach contained winged (female) ants.

211. **Dendroica virens.** BLACK-THROATED GREEN WARBLER. — Common fall migrant, from August 1 to September 20.

212. **Dendroica townsendi.** TOWNSEND'S WARBLER. — Rare migrant in spring and fall. Arrives May 8. Undoubtedly breeds in Tom Green County, near the plains, in a dense swampy undergrowth full of springs, about five miles in circumference. Seen May 31 and July 31, in thickets some two miles from the river, along which it migrates. In fall seen from September 1 to 12, on Lipan Creek (Euterpe on map), where one was killed on the 10th by Mr. Loomis. Shot September 5, in Tom Green County. Mr. Henshaw, in 'The Auk,' speaks of it as occurring on the Upper Pecos. The A. O. U. habitat is east as far as Western Colorado and south into Mexico; hence this record considerably extends the range of this species to the south and west.

213. **Seiurus aurocapillus.** OVEN-BIRD.—Overlooked until September 10, 1886, when I shot one specimen and saw another in Concho County.

214. **Geothlypis philadelphia.** MOURNING WARBLER. — Tolerably common in fall migration in Concho County. None seen after September 1. Feeds on ants. Mr. Sennett's record is the only other notice I can find of this species in Texas.

215. **Geothlypis macgillivrayi.** MACGILLIVRAY'S WARBLER. — Abundant from Castle Hill to Pecos River. Probably breeds.

216. **Geothlypis trichas occidentalis.** WESTERN YELLOW-THROAT. — Abundant spring and fall migrant.

217. **Icteria virens.** YELLOW-BREASTED CHAT. — Tolerably common during the spring migrations.

218. **Icteria virens longicauda.** LONG-TAILED CHAT.—Abundant summer visitor, especially in dense undergrowth. Very numerous in the

swamps above mentioned, where I believe Townsend's Warbler breeds. Arrives in pairs the middle of April; all are mated by the end of April. They have a peculiar breeding cry,—like the sound of a gate swinging on rusty hinges, easily and successfully imitated to procure specimens. I found its nest May 6, 1885, at the edge of a thicket in a low bush; clutch four. All summer it is a most admirable mimic, and frequently throws such ventriloquial powers into its voice as to make the vocalist seem anywhere but where he is. Migrates leisurely, and is not finally lost sight of until October 1.

219. **Sylvania pusilla.** WILSON'S WARBLER. — Abundant spring and fall migrant. In fall every storm brings a fresh lot of this Warbler, the Golden, Nashville, Orange-crowned, and others. They linger often only a few hours, and there is a lull in the migration until the next storm. Abundant all over Western Texas from April 2 to May 15, and from September 3 to 30.

220. **Sylvania canadensis.** CANADIAN WARBLER.—One was shot from a flock of six, about the end of August, 1885, in Concho County.

221. **Setophaga ruticilla.** REDSTART. — Abundant during the fall migration from August 31 to September 10, in Concho County.

222. **Anthus pensilvanicus.** AMERICAN PIPIT. — Common in fall migration; less common in spring.

223. **Anthus spragueii.** SPRAGUE'S PIPIT.—One was shot in January, 1885, in Tom Green County, at the edge of the Plains. A small flock was seen in Concho County, October 15, 1886.

224. **Oroscoptes montanus.** SAGE THRASHER. — Tolerably common resident in Tom Green County. Winters in Concho County, as far east at least as Colorado. No eggs found but I have seen scores of nests.

225. **Mimus polyglottus.** MOCKINGBIRD. — Abundant resident. Locally migratory in winter. Raises two broods, perhaps three. Nests found from April 15 to July 16. Clutch 4-5. Sings all through the winter, and often at night. A great scold, and in winter has a special enmity to Flickers.

226. **Galeoscoptes carolinensis.** CATBIRD. — Occasional migrant in spring and fall, in the eastern part of Concho County.

227. **Campylorhynchus brunneicapillus.** CACTUS WREN.—A summer bird, and probably resident in Tom Green County on the Plains. Seen migrating south with other birds September 30, 1885. Abundant in July, on the line of the Texas and Pacific Railroad. No nests found within our limits, but just outside (west) one was found May 6, containing three young, and on May 16 one with six eggs, in a palma cactus.

228. **Salpinctes obsoletus.** ROCK WREN.—Common winter visitor, from October 7 to May 1. Breeds further west.

229. **Thryothorus ludovicianus.** CAROLINA WREN.—Rare winter visitant; seen only on Spring Creek, in Tom Green County. Probably breeds, as a pair were noted in a thicket, May 6, 1885.

230. **Thryothorus bewickii bairdii.** BAIRD'S WREN. — Resident; common. A fine singer from early spring till fall. Breeds anywhere; in old

coat sleeves, behind mirrors, in piles of sacks, in old posts. Raises two broods; eggs 4 to 6. Nests April 15 to June 5.

231. **Troglodytes aëdon parkmanii.** PARKMAN'S WREN. — Very common in the fall in Concho County.

232. **Cistothorus palustris.** LONG-BILLED MARSH WREN. — Spring migrant, in both counties. Rare.

233. **Certhia familiaris americana.** BROWN CREEPER. — Tolerably common winter visitor. Arrives October 15.

234. **Sitta carolinensis.** WHITE-BREASTED NUTHATCH. — Resident. Rare. Shot in June and January. Found in both counties. No nests known.

235. **Parus atricristatus.** BLACK-CRESTED TITMOUSE.—Resident. Tolerably common. Breeds in old Woodpecker holes. Nest found April 15, 1885, and two others April 18 and 20. This is another species that is spreading eastward. Four years ago they were rarely found except on the main river. Now each creek has a family or two, as far east as the Colorado River. I have found this the prevailing species from here to El Paso.

236. **Parus atricapillus.** CHICKADEE. — One taken during the spring migration in eastern Concho County.

237. **Parus carolinensis.** CAROLINA CHICKADEE. — One taken during spring migration in eastern Concho County. A pair found wintering on the river in 1886.

238. **Regulus satrapa.** GOLDEN-CROWNED KINGLET.—Tolerably common during the fall migration. A few winter in Concho County.

239. **Regulus calendula.** RUBY-CROWNED KINGLET.—Abundant from October 1 to April 10.

240. **Polioptila cærulea.** BLUE-GRAY GNATCATCHER. — Abundant summer visitant. Arrives in pairs March 13; common March 24. Last seen in 1884, October 5; in 1886, October 8. No eggs found, but nests with young (5 each) May 1 and 12.

241. **Turdus ustulatus swainsoni.** OLIVE-BACKED THRUSH. — Fall migrant. Rare in Tom Green County; not observed in Concho County.

242. **Turdus aonalaschkæ.** DWARF HERMIT THRUSH. — Tolerably common fall migrant. Noted every day from September 20 to October 10; to at least Fort Stockton, crossing the Plains.

243. **Turdus aonalaschkæ auduboni.** AUDUBON'S HERMIT THRUSH.— Spring migrant. Tolerably common in Tom Green County; rare in winter in Concho County. Noted for the first time in 1886-87.

244. **Turdus aonalaschkæ pallasi.** HERMIT THRUSH. — One taken during the spring migration in eastern Concho County.

245. **Merula migratoria.** AMERICAN ROBIN. — Tolerably common in spring and fall. A few winter in the river bottoms and abundantly further south.

246. **Merula migratoria propinqua.** WESTERN ROBIN. — Rare in fall in Concho County. A few winter in Tom Green County. Abundant in winter west of this county.

247. **Sialia sialis.** BLUEBIRD.—Resident in portions of Concho County. Very common in spring and fall. They wander considerably after January 1, in search of berries, which are very scarce. Associates frequently with the two next. A nest was found in a hole in an old stump in July, 1882, with four eggs. Young in spotted plumage shot throughout August.

248. **Sialia mexicana.** WESTERN BLUEBIRD. — Rare winter visitant. Shot in flocks of the common Bluebird in Concho County.

249. **Sialia arctica.** MOUNTAIN BLUEBIRD. — Rare until the fall of 1886, when it appeared in immense flocks, and was very unwary, feeding with Cedarbirds and other species on the numerous wild berries in October and November. Some of the males were nearly ultramarine; others in the same flock were various shades of blue. None seen since January 10, 1887.

ADDENDA. — 250. **Rallus elegans.** KING RAIL. — One seen in South Concho, in the spring of 1886, by Mr. Cope, who tried to catch it with a dog.

251. **Pandion haliaëtus carolinensis.** OSPREY. — Several pairs breed on South Brady, according to Mr. Cope.

252. **Chordeiles virginianus henryi.** WESTERN NIGHTHAWK. — Rare on the Plains; probably breeds.

253. **Spizella monticola ochracea.** WESTERN TREE SPARROW.—Common in small flocks, winter of 1884-85.

CORRECTION.—On page 183, line 16 from bottom, for "about 240" read 253.

ADDITIONS TO THE AVI-FAUNA OF BAYOU SARA, LA.

BY CHARLES WICKLIFFE BECKHAM.

IN the 'Bulletin of the Nuttall Ornithological Club' for July, 1882, I gave an annotated list of the birds of Bayou Sara, Louisiana, the result of five days' work during the month of April of that year. Eighty-six species were enumerated. Since then I have had an opportunity of making further observations at the same place; extending over a much longer period, from April 1 to April 28, and am able to add twenty-seven species to the fauna as heretofore given.

The weather during the period mentioned was exceptionally dry, both for the season and the locality, which fact doubtless

had its effect upon the water birds, as but few were seen, but nearly all the species of land birds noted were represented by large numbers of individuals. At the date of my arrival vegetation was very far advanced, and at the stage which ordinarily prevails in the neighborhood of Washington about the middle of May.

A great deal of time was spent collecting in the densely wooded ravines alluded to further on, localities almost entirely neglected during my former visit. It was here that Swainson's Warbler most abounded, and the Hooded was always to be seen and heard in the same haunts; the male leisurely skipping about the branches at a distance of ten or twenty feet from the ground, singing in a languid sort of way, while the sharp *tsip* of the less gaudily attired female proceeded from the canes and scant undergrowth near the ground. On April 17 I found an empty nest, just finished, two feet from the ground, in a clump of small canes in one of these ravines, attached to one of the canes. On the 24th the female was seen on the nest, which then contained four perfectly fresh eggs. These birds were also very abundant in the swamp, where I once heard four singing at the same time.

The Mockingbird and Brown Thrasher were fully as abundant as in 1882; the former being found in the usual open places, near dwellings, in gardens, etc., and great numbers of them were nesting in the Cherokee rose bushes along Alexander's Creek. Like most of his tribe, the Mockingbird readily adapts himself to his environment in the matter of nest-building, and finding cotton-wool the most abundant and accessible material suitable for his purposes he uses a great deal of it. In all the nests examined (at least a dozen) the 'great staple' was the principal constituent. The Thrashers I found in every sort of place visited: building their nests in the crepe myrtles and rose bushes about the house, and again down in the darkest and most dismal places in the swamp.

The Catbird did not put in his appearance until the 18th. Although abundant here, he is a bird of very retiring habits, and exclusively a denizen of the woods and dense thickets, so that but few of the natives know of his presence at all, while in most northern and eastern localities he is as familiar a bird as the Robin or House Wren. However, the Wood Thrush, which is very common, makes an agreeable substitute, coming about the

dwellings with the fearless confidence of the Chipping Sparrow, and by his unexpected sociability atoning for the Catbird's shortcomings in this respect. They were first seen on April 4.

Bluebirds were not numerous, but the two or three pairs seen were evidently nesting. The Gnatcatchers and Blue Yellow-backed Warblers were particularly abundant and voluble; the former always going in pairs. Carolina Chicadees were found every day, and I saw several pairs of adult birds conducting their noisy broods through the woods in search of food. Their active relatives, the Tufted Titmice, were very common and found in all sorts of places, almost equaling in this respect the ubiquitous Carolina Wren, a bird probably exceeding in numbers any other summer resident here, and which finds itself at home anywhere, nesting indifferently in the stable, under the piazza, or in an old stump down in the swamp. But wherever he may be, he makes no secret of his whereabouts, for hill and dale and swamp and garden, all resound from dawn to twilight with the full-toned, tireless songs of this Orphean prodigy. I say songs, for the Carolina Wren is no one-tuned musical bore, but possesses much of the vocal versatility of his more favored rival the Mockingbird. They pair quite early here, for towards the last of April I saw many young birds flying about accompanied by the parents.

I saw but three or four Black-and-white Warblers, but was fortunate enough to find a nest on the 23d, containing four partly incubated eggs. It was on the ground on a densely wooded hillside, loosely constructed of dead leaves, etc., and was roofed over so as to be completely sheltered from the rain. The female did not leave her nest until I was within two or three feet of her, when she flew to the ground feigning lameness, but this old and pathetic subterfuge had just the opposite effect it was intended to have. The nest was admirably concealed and would never have been found had not the bird itself indicated its location.

The Yellow Warbler was often seen in the tree tops along the creek bottom, and the Redstart was generally found in the same places but always among the lower branches. The Pine Warbler, which was not uncommon in 1882, was not seen at all, nor was the Sycamore Warbler met with; and but one Blackburnian was observed, a male taken on the 20th.

Golden-crowned Thrushes arrived on the 24th and soon became common in their usual haunts, which were frequented also by

the Kentucky Warbler, one of the most abundant birds here. The Maryland Yellow-throat and Yellow-breasted Chat became very numerous towards the last of the month, particularly in open places near the edges of the swamp, localities I was surprised to find much affected by the White-throated Sparrow, which was abundant up to the date of my departure.

The Red-eyed and White-eyed Vireos were found in abundance, the latter much the more numerous of the two, while the Warbling Vireo was seen but once—in a shade tree in Bayou Sara. The Purple Martin was abundant in town but was seen nowhere else. The Cedarbird was several times observed in small flocks. It is said that none are seen here in summer, but in fall and early spring it is very abundant and great numbers of them are killed for the table.

The Rough-winged Swallows, which arrived in March, were present in force, and were breeding in holes in the banks along Alexander's Creek, where the Kingfishers were also nesting. A nest containing young Kingfishers was found on the 20th. The Summer Tanagers arrived on the 12th in full song and immediately became common. I found them at home in the swamp as well as on the high ground.

The Savanna Sparrow, Indigo Bunting, and Chewink were rather common, but Bachman's Finch, though diligently searched for, was not seen at all. Two specimens of this rare bird were taken here in 1882. The Nonpareil is a scarce bird here, as but two were seen during my stay: a male and female on the 23d. The Swamp Sparrow was sparingly represented among the transients.

The Cardinal Grosbeak was breeding abundantly everywhere, and the Red-winged Blackbirds, preferring upland ponds to other places, were paired and beginning to build. A few Meadow Larks and Baltimore Orioles were seen, and the Orchard Orioles were quite abundant, the yellow males considerably exceeding in numbers those in chestnut and black.

In the former paper the following note concerning the Grackle found here is given: "*Quiscalus purpureus.* Purple Grackle.—A common Grackle about the river and bayou at Bayou Sara is referred to this form, as the one found forty or fifty miles down the river is, according to Dr. Langdon, the Purple, and not the Bronzed Grackle." This supposition turns out to be erroneous. No spec-

imens were shot in 1882, but this time I was fortunate enough to obtain one, which proves to be typical *Quiscalus quiscula æneus*. They appeared in the neighborhood of Bayou Sara during the preceding winter in enormons flocks and did a great deal of damage to the growing crops. They destroyed five acres of corn for Mr. James P. Bowman, a planter, near Bayou Sara, pulling the young sprouts up by the roots. Mr. Bowman poisoned several thousand of them with arsenic, but unfortunately a good many Carolina Doves were killed along with the Grackles.

The Blue Jays were exceedingly abundant, and the customary state of warfare prevailed between these rowdy freebooters and the rest of the feathered tribe. Kingbirds, Great-crested Flycatchers, and Woodpeckers were about equally represented; and their respective dates of arrival being April 3, 7, and 6. Acadian Flycatchers, first noted on the 13th, were occasionally seen and heard in dense woodland. Ruby-throated Hummingbirds and Chimney Swifts were abundant. The note of Chuck-will's-widow was first heard on the evening of April 11; the birds soon became very common, and as soon as twilight came on were to be heard on all sides. They would generally cease singing before eight o'clock, and occasionally one would be heard in the morning at daybreak. A few Nighthawks were seen, and one was shot from a small pine tree in an open place. It permitted me to approach within fifteen feet.

Among the Woodpeckers, besides *Picus villosus*, elsewhere noted, the Downy, Red-bellied, and Red-headed were well represented, but only three or four Flickers were observed. The Yellow-billed Cuckoos arrived on the 18th and were very abundant.

Judge Lawrason, who lives in the country near Bayou Sara, informed me that as late as 1875 he found the Carolina Parakeet every year at his place, but since that date he has neither seen nor heard of any in this locality.

A great many Vultures and Carrion Crows were seen, the latter being particularly abundant.

The only water birds observed, other than those elsewhere mentioned, were Wilson's Snipe, Solitary Sandpiper, Spotted Sandpiper, Little Green Heron, and Coot. A pair of the latter were seen on a large upland pond, considerably overgrown with water-lillies, etc., and a negro living near by asserts that they breed there.

87. **Ajaja ajaja.** ROSEATE SPOONBILL.—Mr. George Bains, of Waverly Plantation, shot one of these birds several years ago, feeding along the edge of a pond near his house, and Judge Lawrason informed me that it breeds sparingly in the swamp.

88. **Elanoides forficatus.** SWALLOW-TAILED KITE.—I did not see this bird, but several trustworthy persons informed me that it was not uncommon in the swamp.

89. **Buteo harlani.** HARLAN'S HAWK.—Not seen by me. Audubon states that he shot the type specimen of this rare Hawk at Bayou Sara.

90. **Dryobates villosus.** HAIRY WOODPECKER.—A common bird here. On April 11 I shot a fully fledged young female. The only difference noted between it and the adult was in the smaller size of the latter, particularly the bill.

91. **Empidonax flaviventris.** YELLOW-BELLIED FLYCATCHER. — Not seen until the 26th when two were taken and several more observed. Apparently preferring open places to the woodland.

92. **Ammodramus savannarum passerinus.** GRASSHOPPER SPARROW. —First seen on the 9th; common afterwards.

93. **Spizella socialis.** CHIPPING SPARROW. — Common in suitable places. Not seen in the woods.

94. **Spizella pusilla.** FIELD SPARROW.—Abundant and breeding.

95. **Passer domesticus.** EUROPEAN HOUSE SPARROW.—These pests have recently gained a foothold in Bayou Sara, but are not very numerous. None were seen in the country.

96. **Spiza americana.** DICKCISSEL.—But one individual of this handsome species was seen, a male, which was shot on the 20th, in a meadow in company with Grasshopper Sparrows.

97. **Piranga erythromelas.** SCARLET TANAGER.—While here in 1882 I shot a female of this species which is still in my collection, but in writing up my notes of that trip the capture was overlooked. None were seen during my last visit.

98. **Petrochelidon lunifrons.** CLIFF SWALLOW.—Noted but once, on April 23, when several were seen flying about a large pond in company with *T. bicolor*, *C. erythrogastra*, and *Stelgidopteryx serripennis*.

99. **Chelidon erythrogastra.** BARN SWALLOW.—Several times seen but apparently not common.

100. **Tachycineta bicolor.** TREE SWALLOW.—First observed perched on some telegraph wires on the 9th, and again seen in considerable numbers near the same place on April 23.

101. **Vireo flavifrons.** YELLOW-THROATED VIREO.—This Vireo was not observed until April 9, when two were heard singing. Several times seen afterwards, but never in the dense woods; always in trees about open places.

102. **Protonotaria citrea.** PROTHONOTARY WARBLER.—The first individual of this species was seen and captured on April 6, in a willow tree near a pond in the creek bottom, but they did not appear in force until the 12th, on which day I shot five, and saw at least twenty more. They

continued to be common in suitable places up to the time of my departure, and a great many pairs were undoubtedly breeding. I found two nests just completed, one on the 16th and the other on the 25th, neither of which contained eggs. They were placed in old Woodpecker holes, in hollow snags about fifteen feet from the ground. Although a number of the birds were seen in the swamp, the most of them were found about the willow trees along Alexander's Creek, a locality, however, only about one half of a mile from the swamp. They were usually quite tame and unsuspicious. Five or six of the twenty-five specimens taken had the feathers of the forehead stained and gummed up with some sticky, resinous substance that could not be washed off.

103. **Helmitherus vermivorus.** WORM-EATING WARBLER.—A rather common bird, inhabiting mostly the same places as *H. swainsoni*, that is, densely wooded ravines. First seen on April 11. Towards the end of the month I found several pairs which were evidently mated and nesting, but no nests were found.

104. **Helinaia swainsoni.** SWAINSON'S WARBLER.—Although I only spent five days at this place in 1882, it is surprising, in view of facts cited below, that Swainson's Warbler was not met with. On April 8, while standing near the edge of a dense tangle of cane and 'black jack' (a sort of vine), I heard a bird-note entirely new to me, but which reminded me very much of the song of the Large-billed Water-thrush. It was impossible to get at the bird, and I did not again hear the note until three days afterward. I was sitting on the ground in a densely wooded ravine, where the only sounds to be heard proceeded from the usual horde of hungry mosquitoes, singing about my head, now and then mingled with the languid ditty of a Hooded Warbler lazily foraging for insects in the branches above, when a small, dark looking bird whizzed by me like an arrow and disappeared in a small clump of canes and bushes growing in the bottom of the ravine. Just as I was about getting up to look for it the same Seiurine song, heard before, burst forth, apparently only a few feet distant; then it dawned upon me that I was in the presence of the much sought for *Helinaia swainsoni*. The song was uttered at intervals of about half a minute, the bird all the time remaining perfectly motionless, and for fully ten minutes I sat in the same place eagerly scanning everything in the direction of the sound, which apparently changed with every utterance, afraid to move lest the slightest noise or motion should drive off the puzzling ventriloquist. After having finished the performance to his apparent satisfaction, he flew from a twig directly in front of me to the ground, when the usual tragedy took place. Hardly had I picked the bird up before two more appeared upon the scene; two belligerent males fighting and chasing each other about. One of these was also secured, and two or three more were seen or heard that day in similar localities.

The bird is undoubtedly common here, for altogether I obtained twenty specimens during my stay; on one day taking as many as four. It is, however, exceedingly difficult to get them, but, as Mr. Brewster in his interesting account of the species, says, "once seen it is yours"—if you can

only see it, for, like the Whip-poor-will, it is oftener heard than seen. On at least a dozen occasions I have stood within twenty or thirty feet of a male singing in the manner above described, and been unable to see him, until, tired of fruitless searching, I would make a noise, when off he would dart into a brake where it would be a waste of time and energy to follow.

Four or five times I saw the bird on the ground, *walking* about in that deliberate manner peculiar to the Golden-crowned and Water Thrushes, and twice I have observed the male singing on the ground, pausing every eight or ten steps in his search for insects to throw back his head and pour forth his curious melody, a habit, so far as I have read, not noted by previous observers.

Although occasionally found along the edges of the swamp, the favorite haunts were the dark, wooded ravines, making off from Alexander's Creek and other water courses. Along the bottoms of these ravines cane is always to be found growing, and the bare ground in these small brakes forms the favorite feeding places of the bird. Although no nests were found, they were evidently paired and breeding before I left.

105. **Helminthophila peregrina**. TENNESSEE WARBLER.—Only one individual was recognized, a male shot out of a party of four or five Warblers skipping about the top of a willow in the creek bottom on April 25.

106. **Dendroica coronata**. MYRTLE WARBLER.—During the first three or four days of my stay I found the Myrtle Warbler quite common in parties of from four to eight, but none were seen after April 7. All those observed were moulting.

107. **Dendroica cærulea**. CÆRULEAN WARBLER.—But one individual of this species was seen, a handsome male in full spring plumage, which was shot from the top of a sycamore on April 20.

108. **Dendroica pennsylvanica**. CHESNUT-SIDED WARBLER.—This Warbler seems also to be a rare bird here, as but one was observed, a male shot in the creek bottom, April 22.

109. **Seiurus noveboracensis**. WATER THRUSH.—One of these birds was taken in the swamp on April 26. It was in company with another of the same species. No others were noted.

110. **Troglodytes aëdon**. HOUSE WREN.—Evidently a rare bird here, as I saw it but once, April 20, when one of a pair was shot in a clump of briars.

111. **Regulus calendula**. RUBY-CROWNED KINGLET.—This Kinglet was quite abundant early in April, and the males were in full song, but they soon left for the North. *R. satrapa* was not seen at all.

112. **Turdus aliciæ**. GRAY-CHEEKED THRUSH.—Not seen until the 22d, after which date they became rather common, but I never saw more than one in the same place.

113. **Turdus aonlaschkæ pallasi**. HERMIT THRUSH.—Rather common in suitable places. Doubtless a winter resident here.

THE SIGNIFICANCE OF CERTAIN PHASES IN THE GENUS *HELMINTHOPHILA*.

BY SPENCER TROTTER, M. D.

THE Mniotiltine genus *Helminthophila* has of late years presented some very interesting and curious features in the relations of certain of its species to one another and to several remarkable forms which have come to light in the past decade. In fact, in its earlier known history as a genus two forms appeared, one of which has only lately turned up again within our limits, while the other, if indeed it belonged with the genus, has long been relegated to the list of 'lost' or 'doubtful' species, a veritable myth, never having been seen since its first discovery, so that the genus has always figured in a rather eccentric light.

The group is highly characteristic of the Nearctic Region, consisting of eight well defined species, which pass under the general name of Swamp Warblers. Nowhere what might be called abundant birds, the *Helminthophilæ* still enjoy an extensive range over the continent, and are essentially migratory, as the insect nature of their food demands. The species fall into two subgroups, as regards their general form and pattern of color, and this corresponds pretty closely with the extent of their distribution.

Celata, *ruficapilla*, *peregrina*, *luciæ*, and *virginiæ* form one section, small birds of a more or less uniform and quiet coloration, the two former being the most widely distributed species of the genus.

The Orange-crowned Warbler, *celata*, with its western variety *lutescens*, ranges over the entire continent from ocean to ocean, but is comparatively rare in the Eastern Province, being seldom met with. It winters southward, beyond United States limits into Mexico, and reaches high latitudes in the Northwest. The Nashville Warbler, *ruficapilla*, on the other hand, with as wide a range as *celata*, is far more abundant in the Eastern Province than in the West, and extends its migrations northward to the Arctic Basin on the east. The Tennessee Warbler, *peregrina*, is chiefly eastern in its distribution, breeding northward into high latitudes.

Virginiæ and *luciæ* are restricted in their ranges, being characteristic of the Colorado Valley and Southern Rocky Mountain region.

The other section comprises *bachmani*, *chrysoptera*, *pinus*, and their curious allies, *lawrencei* and *leucobronchialis;* birds of striking coloration and of much more restricted ranges than the three plainer colored species of the former sub-group. *Bachmani* is exceedingly rare, having been taken but a few times in the Southern States. The Blue Golden-winged Warbler, *chrysoptera*, and the Blue-winged Yellow Warbler, *pinus*, are exclusively birds of the Eastern Province, the former ranging into Canada, though rarer in the Northern States, the latter scarcely if ever going beyond Massachusetts and Minnesota. Both winter south of our limits.

I have taken the liberty of thus hastily reviewing the genus for the purpose of bringing together as nearly as possible our present knowledge of the distribution of the several species. The history of the two forms *lawrencei* and *leucobronchialis* is already so well known to ornithologists that it need not be reiterated here, except to recall the very general belief of their hybrid nature.

The question naturally arises in the minds of most persons who have given any thought to the subject, What does the occurrence of such peculiar forms, taken in conjunction with other facts, signify? We are stepping into a somewhat uncertain region when we attempt to speculate on a subject of this character, but I believe that the only way in which we may hope to throw any light whatever upon such a subject is from an evolutionary standpoint.

The rise and decay of genera and species in the struggle for existence; the pressure of dominant groups upon smaller and less adapted races; action and reaction through environment;—these are the factors involved, and that have given rise to many apparently inexplicable phenomena.

A dominant group is characterized by the abundance of its forms, both in species and individuals, over wide areas, this being the index of its vigor and consequent ability to maintain itself against competitors, and its adaptability to varying conditions of environment. Rarity in species and individuals is indicative of degeneracy, the expression of the inability of the group to hold its own.

Hybridism under nature is a further expression of decay, the result of a growing rarity in the individuals of a species.

Of course a hybrid may be purely accidental, as I believe the case to have been with the cross between the Barn and the Cliff Swallow which I described some years ago, the result of a *mesalliance* between two individuals during the spring flights when numbers of both species are 'hawking' in the air together prior to nesting. But when we see crossing repeatedly performed the question of accident must be set aside and another means of solution sought.

Let us see how these principles will apply to the genus *Helminthophila*. Here we have a group of eight species, as has been cited above, none of which are as a rule very abundant, especially when compared with other birds, *e. g.*, certain species of *Dendroica*.

Recalling the distribution of the species, we find that each has a more or less definite area, but their habitats considerably overlap one another That of the two sub-divisions noted, *celata*, *ruficapilla*, and *peregrina* are the most widely distributed, while *chrysoptera*, *pinus*, and their allies are much more restricted, and it is in this latter section that we find what is to my mind an evidence of decay. Strictly insectivorous, the *Helminthophilæ* have come in direct competition with other insectivorous forms, and among them the closely allied and dominant genus *Dendroica*, with its thirty odd well defined species, whose habits and nature closely resemble the Swamp Warblers in many ways. The pressure exerted by *Dendroica* would be very much greater in the East than in the West, owing to the greater preponderance of individuals and species in the former area; consequently the more restricted eastern species of *Helminthophila* would feel this competition keenly.

Many of the *Dendroicæ* pursue and capture their food in much the same manner as the *Helminthophilæ*, and in similar localities; more than this, the majority are expert fly-catchers, taking mature insects on the wing with much greater readiness and persistency than do the species of Swamp Warblers. A glance at the bills of the two will show which is the best adapted for diversified work.

And what has been the upshot of all this? Simply that these restricted species of *Helminthophila* are succumbing to more wide-spread and better adapted forms, and their decrease in num-

bers, though not directly apparent in all the species, is expressed by the curious phenomena which have lately come under our notice. *Bachmani* is exceedingly rare, for aught we know on the verge of extinction, though it still exists in favorable localities in the vast swamps of the Southern States.

The mythical *carbonata* might have been the last of another form,—who can tell? Audubon gave it a place in this genus.

Chrysoptera and *pinus* yet remain fairly abundant but forced apparently to cross with each other, and the resulting forms, *lawrencei* and *leucobronchialis*, without doubt recross with the parent species.* Further, we find evidence that *pinus* has undoubtedly gone over to the strange genus *Oporornis* and contracted an alliance there.†

These are the facts, and we are left to draw our own conclusions in the best way possible. Genera and species rise up, increase and become dominant only to break down again under the pressure of other and better adapted forms. What the other genera of the Mniotiltidæ may have been in the past we can only surmise.

Those that now possess but one or two species may, and very likely have, possessed more and been dominant in their time. A change in habit under pressure and consequent structural modification would be of immense advantage, and finally result in one or two well adapted species forming a well defined genus. Such may have been the history of *Mniotilta*, *Protonotaria*, and others, and such may be the future of these *Helminthophilæ* who now, as it seems to me, show unmistakable evidence of break-down after a long and severe struggle against better adapted forms.

This or ultimate extinction are the only alternatives.

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* Brewster, Wm. Bull. Nutt. Ornith. Club, Vol. VI, Oct. 1881, p. 218.

† Langdon, Frank W. Bull. Nutt. Ornith. Club, Vol V, Oct. 1880, p. 208, plate, iv.

THE BIRDS OF THE WEST INDIES, INCLUDING THE BAHAMA ISLANDS, THE GREATER AND THE LESSER ANTILLES, EXCEPTING THE ISLANDS OF TOBAGO AND TRINIDAD.

BY CHARLES B. CORY.

[*Continued from page 232.*]

FAMILY SCOLOPACIDÆ.

GENUS **Gallinago** LEACH.

Gallinago LEACH, Syst. Cat. Brit. Mam. & Bds. p. 31, 1816.

Gallinago delicata (ORD).

Scolopax delicata ORD, Wils. Orn. ix, 1825, p. ccxviii.

Scolopax wilsoni SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 587 (St. Bartholomew); *ib.* p. 601 (Porto Rico).

Scolopax gallinago D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 231 (1840).

Gallinago wilsoni GOSSE. Bds. Jam. p. 353 (1847).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas); *ib.* BREWER, p. 308 (1860) (Cuba).—GUNDL. J. f. O. 1862, p. 85 (Cuba).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 353 (1866); *ib.* J. f. O. 1875, p. 321 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 197 (1878) (St. Vincent); *ib.* p. 238 (Antigua); *ib.* p. 242 (Barbuda).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 368 (1878) (Porto Rico).—CORY, Bds. Bahama I. p. 156 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, List Bds. W. I. p. 26 (1885).

Gallinago wilsonii A. & E. NEWTON, Ibis, 1859, p. 258 (St. Croix).—SCL. P. Z. S. 1861, p. 80 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).

Gallinago media wilsoni WELLS, List Bds. Grenada, p. 8 (1886).

Bahamas and Antilles during migrations.

Philohela minor (GMEL.).

Scolopax minor A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).

Rusticola minor GOSSE, Bds. Jam. p. 354 (1847) (Hill).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 68 (Jamaica).

Recorded by Gosse and others from Jamaica. The bird might occasionally wander to Cuba, and possibly Jamaica, as it is not uncommon in some parts of Florida in winter.

GENUS **Macrorhamphus** LEACH.

Macrorhamphus "LEACH, Cat. Brit. Birds, 1816."

Macrorhamphus griseus (GMEL.).

Scolopax grisea GMEL. Syst. Nat. I, p. 568 (1788).
Limnodramus griseus LEMB. Aves Cuba, p. 91 (1850).
Macrorhamphus griseus GUNDL. J. f. O. 1862, p. 85 (Cuba); *ib.* Repert. Fisico-Nat. Cuba, I, p. 353 (1866); *ib*, J. f. O. 1875, p. 322 (Cuba).
Macrorhamphus griseus CORY, Bds. Bahama I. p. 157 (1880). — A. & E. NEWTON, Handb. Jamaica, p. 116 (1881). — CORY, List Bds. W. I. p. 26 (1885).

Recorded from Bahamas, Cuba, and Jamaica.

Macrorhamphus scolopaceus (SAY).

Limosa scolopacea SAY, Long's Exp. 1823, p. 170.
Macrorhamphus scolopaceus ALBRECHT, J. f. O. 1861, p. 213 (Cuba); *ib.* GUNDL. 1862, p. 85 (Cuba); *ib.* Repert. Fisico-Nat. Cuba, I, p. 354 (1866), *ib.* J. f. O. 1875, p. 322 (Cuba).
Macrorhamphus scolopaceus CORY, List Bds. W. I. p. 26 (1885).

Cuba and Antilles during migrations.

GENUS **Micropalama** BAIRD.

Micropalama BAIRD, Birds N. Am. p. 726, 1858.

Micropalama himantopus (BONAP.).

Tringa himantopus BP. Ann. Lyc. N. Y. II, p. 157 (1826). —BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).
Totanus himantopus LEMB. Aves Cuba, p. 95 (1850).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica). — GUNDL. Repert. Fisico-Nat. Cuba, I, p. 356 (1866). — A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).
Ereunetes himantopus SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 587 (St. Bartholomew); *ib.* p. 602 (Porto Rico).
Micropalma himantopus MOORE, Pr. Bost. Soc. Nat. Hist. XIX, p. 241 (1877) (Bahamas).—CORY, List Bds. W. I. p. 26 (1885).
Micropalama himantopus GUNDL. J. f. O. 1875, p. 326 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 373 (1878). — CORY, Revised List Bds. W. I. p. 26 (1885).—WELLS, List Bds. Grenada, p. 8 (1886).

Found throughout the Antilles.

GENUS **Ereunetes** ILLIG.

Ereunetes ILLIGER, Prodromus, p. 262, 1811.

Ereunetes pusillus (LINN.).

Tringa pusilla LINN. Syst. Nat. I, p. 252 (1766).
Pelidna pusilla GOSSE, Bds. Jam. p. 348 (1847)?
Hemipalama semipalmata LEMB. Aves Cuba, p. 96 (1850). — BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).
Hemipalama minor LEMB. Aves Cuba, p. 97 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).
Tringa semipalmata BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas).
Ereunetes pusillus CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 195 (Jamaica). — GUNDL. Repert. Fisico-Nat. Cuba, I, p. 356 (1866); *ib.* J. f. O. 1875, p. 327 (Cuba); Anal. Soc. Esp. Hist. Nat. VII, p. 374 (1878) (Porto Rico). — SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 587 (St. Bartholomew); *ib.* p. 602 (Porto Rico). — CORY, Bds. Bahama I. p. 157 (1880). — A. & E. NEWTON, Handb. Jamaica, p. 116 (1881). — CORY, List Bds. W. I. p. 26 (1885). — WELLS, List Bds. Grenada, p. 8 (1886). — CORY, Ibis, 1886, p. 502 (Grand Cayman).
Ereunetes petrificatus MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 68 (Jamaica).—LAWR. Pr. U. S. Nat. Mus. I, p. 488 (1878) (Dominica); *ib.* p. 238 (Antigua); *ib.* p. 242 (Barbuda); *ib.* p. 488 (Guadeloupe).

Throughout the Antilles during migrations.

Ereunetes occidentalis Lawr., if it be considered different from the preceding species, must be given a place in the West India Avifauna.

GENUS **Tringa** LINN.

Tringa LINNÆUS, Syst. Nat. I, 10th ed. p. 148, 1758; *ib.* 12th ed. p. 247, 1766.

Tringa minutilla VIEILL.

Tringa minutilla VIEILL. Nouv. Dict. XXXIV, p. 452 (1819). — LAWR. Pr. U. S. Nat. Mus. I, p. 197 (1878) (St. Vincent). — ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia). — CORY, Bds. Bahama I. p. 158 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881). — CORY, List Bds. W. I. p. 26 (1885); *ib.* Ibis, 1886, p. 502 (Grand Cayman).

Tringa temminckii D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 240 (1840).

Pelidna pusilla GOSSE, Bds. Jam. p. 348 (1847)?—GUNDL. J. f. O. 1862, p. 87 (Cuba).

Actodromas wilsonii A. & E. NEWTON, Ibis, 1859, p. 258 (St. Croix).

Tringa wilsoni BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas).—SCL. P. Z. S. 1861, p. 80 (Jamaica).

Tringa pusilla BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Tringa wilsonii ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).

Actodromas minutilla MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 357 (1866); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 376 (1878) (Porto Rico).

Winter visitant to the Bahamas and Antilles.

Tringa maculata VIEILL.

Tringa maculata VIEILL. Nouv. Dict. XXXIV, p. 456 (1819).—A. & E. NEWTON, Ibis, 1859, p. 258 (St. Croix).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 69 (1867) (Bahamas); *ib.* MOORE, XIX, p. 241 (1877) (Bahamas).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 587 (St. Bartholomew).—LAWR. Pr. U. S. Nat. Mus. I, p. 461 (1878) (Guadeloupe).—CORY, Bds. Bahama I. p. 159 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, List Bds. W. I. p. 26 (1885); *ib.* Ibis, 1886, p. 502 (Grand Cayman).

Tringa pectoralis LEMB. Aves Cuba, p. 98 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 602 (Porto Rico).

Pelidna pectoralis GUNDL. J. f. O. 1862, p. 87 (Cuba).

Actodromas maculata GUNDL. Repert. Fisico-Nat. Cuba, I, p. 356 (1866); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 375 (1878) (Porto Rico).—WELLS, List Bds. Grenada, p. 8 (1886).

Actodromas maculatus GUNDL. J. f. O. 1875, p. 328 (Cuba).

Tringa maculosa MOORE, Pr. Bost. Soc. Nat. Hist. XIX, p. 241 (1877) (Bahamas).

Antilles in winter.

Tringa fuscicollis VIEILL.

Tringa fuscicollis VIEILL. Nouv. Dict. XXXIV, p. 461 (1819).—SCL. P. Z. S. 1876, p. 14 (Santa Lucia).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, List Bds. W. I. p. 26 (1885).

Tringa schinzii LEMB. Aves Cuba, p. 98 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Pelidna schinzii GUNDL. J. f. O. 1856, p. 421 (Cuba); *ib.* 1862, p. 87 (Cuba).

Tringa bonapartii SCL. P. Z. S. 1861, pp. 70, 80 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica). — MOORE, Pr. Bost. Soc. Nat. Hist. XIX, p. 241 (1877) (Bahamas).

Actodromas bonapartii GUNDL. Repert. Fisico-Nat. Cuba, I, p. 356 (1866); *ib.* J. f. O. 1875, p. 328 (Cuba).

Tringa bonapartei CORY, Bds. Bahama I. p. 159 (1880).

Antilles in winter.

Tringa canutus LINN.

Tringa canutus LINN. Syst. Nat. I, 10th ed. p. 149 (1758); *ib.* 12th ed. p. 251 (1766). — GOSSE, Bds. Jam. p. 354(1847). — MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881). — CORY, Revised List Bds. W. I. p. 26 (1886).

Recorded from Jamaica.

Tringa ferruginea BRÜNN.

Tringa ferruginea BRÜNN. Orn. Bor. 1764, p. 53. —A. O. U. Check-list, N. Am. Bds. p. 152 (1886).

Anclyoheilus subarquata KAUP, Sk. Ent. Eur. Theirw. 1829, p. 50.

Ancylochilus subarquatus WELLS, List Bds. Grenada, p. 8 (1886).

Recorded from Grenada.

GENUS Calidris CUV.

Calidris CUVIER, Anat. Comp. V, 1805.

Calidris arenaria (LINN.).

Tringa arenaria LINN. Syst. Nat. I, p. 251 (1766).

Calidris arenaria GOSSE, Bds. Jam. p. 354 (1847).—GUNDL. J. f. O. 1856, p. 422 (Cuba). — BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba). — MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica). — GUNDL. Repert. Fisico-Nat. Cuba, I, p. 357 (1866); *ib.* J. f. O. 1875, p. 329 (Cuba). — LAWR. Pr. U. S. Nat. Mus. I, p. 197 (1878) (St. Vincent); *ib.* p. 461 (Guadeloupe).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 376 (1878) (Porto Rico).—CORY, Bds. Bahama I. p. 160 (1880). — A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, List. Bds. W. I. p. 26 (1885).

Arenaria calidris LEMB. Aves Cuba, p. 101 (1850).

Antilles in winter.

GENUS Limosa BRISS.

Limosa BRISSON, Orn. 1760.

Limosa fedoa (LINN.).

Scolopax fedoa LINN. Syst. Nat. I, p. 244 (1766).
Limosa fedoa LEMB. Aves Cuba, p. 90 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba). — GUNDL. J. f. O. 1862, p. 84 (Cuba); *ib.* Repert. Fisico-Nat. Cuba. I, p. 353 (1866); *ib.* J. f. O. 1875, p. 320 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 368 (1878) (Porto Rico).—WELLS, List Bds. Gredada, p. 8 (1886).

Recorded from the Greater Antilles.

Limosa hæmastica (LINN.).

Scolopax hæmastica LINN. Syst. Nat. I, 10th ed. p. 147 (1758).
Limosa hudsonica LEMB. Aves Cuba, Suppl. (1850).—GUNDL. J. f. O. 1862, p. 84 (Cuba); *ib.* Repert. Fisico-Nat. Cuba, I. p. 353 (1866); *ib.* J. f. O. 1875, p. 320 (Cuba).
Limosa hæmastica CORY, List Bds. W. I. p. 26 (1885).

Recorded from Cuba.

GENUS Symphemia RAF.

Symphemia RAFINESQUE, Jour. de Phys. 1819.

Symphemia semipalmata (GMEL.).

Scolopax semipalmata GMEL. Syst. Nat. I, p. 959 (1788).
Totanus semipalmatus LEMB. Aves Cuba, p. 92 (1850). — CORY, Bds. Bahama I, p. 160 (1880).
Catoptrophorus semipalmatus GOSSE, Bds. Jam. p. 354 (1847).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).
Symphemia semipalmata BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 122 (1859) (Bahamas).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 354 (1866); *ib.* J. f. O. 1875, p. 322 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 238 (1878) (Antigua); *ib.* p. 242 (Barbuda).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 369 (1878) (Porto Rico).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, Revised List Bds. W. I. p. 27 (1886).—WELLS, List Bds. Grenada, p. 8 (1886).
Catophtrophorus speculiferus BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).
Symphemia semipalmatus CORY, List Bds. W. I. p. 27 (1885).

Common in the Bahamas and Antilles.

GENUS **Totanus** BECHST.

Totanus BECHSTEIN, Orn. Taschenb. Deutschl. p. 282, 1803.

Totanus melanoleucus (GMEL.).

Scolopax melanoleucus GMEL. Syst. Nat. I, p. 659 (1788).

Totanus melanoleucus GOSSE, Bds. Jam. p. 352 (1847).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 69 (1867) (Bahamas).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 588 (St. Bartholomew); *ib.* p. 602 (Porto Rico).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880).—CORY, Bds. Bahama I. p. 161 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, List Bds. W. I. p. 27 (1885).—WELLS, List Bds. Grenada, p. 8 (1886).

Totanus vociferus LEMB. Aves Cuba, p. 93 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Gambetta melanoleuca SCL. P. Z. S. 1861, p. 80 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 68 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 354 (1866); *ib.* J. f. O. 1875, p. 323 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 238 (1878) (Antigua).—GUNDL. Anal. Soc. Esp. Hist. VII, p. 370 (1878) (Porto Rico).

Glottis melanoleuca GUNDL. J. f. O. 1862, p. 85 (Cuba).

Records from Bahamas, Cuba, Jamaica, Porto Rico, St. Bartholomew, Antigua, and Grenada.

Totanus flavipes (GMEL.).

Scolopax flavipes GMEL. Syst. Nat. I, p. 659 (1788).

Totanus flavipes D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 234 (1840).—GOSSE, Bds. Jam. p. 351 (1847).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—ALBRECHT, J. f. O. 1862. p. 205 (Jamaica).—BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 69 (1867) (Bahamas).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 588 (St. Bartholomew); *ib.* p. 602 (Porto Rico).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia).—CORY, Bds. Bahama I. p. 162 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, List Bds. W. I. p. 27 (1885).—WELLS, List Bds. Grenada, p. 8, 1886.—CORY, Ibis, 1886, p. 502 (Grand Cayman).

Gambetta flavipes MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 68 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 354 (1866).—LAWR. Ann. Lyc. N. Y. VIII, p. 100 (1867) (Sombrero); *ib.* Pr. U. S. Nat. Mus. I, p. 197 (1878) (St. Vincent); *ib.* p. 242 (Barbuda).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 371 (1878) (Porto Rico).

Antilles in Winter.

Totanus solitarius (WILS.).

Tringa solitaria WILS. Am. Orn. VII, p. 53 (1813).

Totanus solitarius D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 238 (1840).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 587 (St. Bartholomew); *ib.* p. 602 (Porto Rico).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).

Totanus chloropygius GOSSE, Bds. Jam. p. 350 (1847).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—GUNDL. J. f. O. 1862, p. 86 (Cuba).

Phyacophilus solitarius SCL. P. Z. S. 1861, p. 80 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 355 (1886); *ib.* J. f. O. 1874, p. 313 (Porto Rico); *ib.* 1875, p. 324 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 372 (1878) (Porto Rico).—LAWR. Pr. U. S. Nat. Mus. I, p. 238 (1878) (Antigua); *ib.* p. 242 (Barbuda); *ib.* p. 461 (Gaudeloupe).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia).—CORY, List Bds. W. I. p. 27 (1885).

Records from Cuba, Jamaica, Porto Rico, Santa Lucia, Antigua, Barbuda, Gaudeloupe, and St. Bartholomew.

GENUS Actitis ILLIGER.

Actitis ILLIGER, Prodr. 1811, p. 262.

Actitis macularia (LINN.).

Tringa macularia LINN. Syst. Nat. I, p. 249 (1766).—BRYANT, Pr. Bost. Soc. Nat. Hist. X, p. 257 (1866) (Porto Rico).

Actitis macularius GOSSE, Bds. Jam. p. 349 (1847).

Totanus macularius LEMB. Aves Cuba, p. 94 (1850).

Tringoides macularia BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Tringoides macularius SCL. P. Z. S. 1861, p. 80 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 355 (1866); *ib.* J. f. O. 1875, p. 325 (Cuba).—SCL. P. Z. S. 1872, p. 653 (Santa Lucia).—LAWR. Pr. U. S. Nat. Mus. I, p. 67 (1878) (Dominica); *ib.* p. 197 (St. Vincent); *ib.* p. 276 (Grenada); *ib.* p. 360 (Martinique).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 372 (1878) (Porto Rico).—ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia).—LISTER, Ibis, 1880, p. 44 (St. Vincent).—CORY, Bds. Bahama I. p. 162 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 115 (1881).—CORY, Bull. Nutt. Orn. Club, VI, p. 154 (1881) (Haiti); *ib.* Bds. Haiti & San Domingo, p. 148 (1885); *ib.* List Bds. W. I. p. 27 (1885).—WELLS, List Bds. Grenada, p. 8 (1886).

Actitis macularia SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 587 (St. Bartholomew); *ib.* p. 602 (Porto Rico).

Antilles, common.

GENUS **Bartramia** LESS.

Bartramia LESSON, Traite d' Orn. p. 553, 1831.

Bartramia longicauda (BECHST.).

Tringa longicauda BECHST. Vog. Nachtr. übers. Lath. Ind. Orn. p. 453 (1812).
Totanus longicauda D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 237 (1840).
Tringoides bartramius BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).
Euligia bartramia GUNDL. J. f. O. 1862, p. 86 (Cuba).
Actiturus bartramius MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 67 (Jamaica)?
Actiturus longicaudus GUNDL. Repert. Fisico-Nat. Cuba, I, p. 355 (1866); *ib.* J. f. O. 1875, p. 326 (Cuba).
Actiturus longicaudatus GUNDL. J. f. O. 1881, p. 401 (Cuba).
Actiturus longicauda A. & E. NEWTON, Handb. Jamaica, p. 115 (1881).
Bartramia longicauda CORY, List Bds. W. I. p. 57 (1885).—WELLS, List Bds. Grenada, p. 8 (1886).

Records from Cuba, Jamaica, and Grenada. I have seen a specimen taken in the Bahama Islands.

GENUS **Tryngites** CAB.

Tryngites CABANIS, J. f. O. 1856, p. 418.

Tryngites subruficollis (VIEILL.).

Tringa subruficollis VIEILL. Nouv. Dict. XXXIV, p. 465 (1819).
Tringa rufescens VIEILL. Nouv. Dict. XXXIX, p. 470 (1819).—LEMB. Aves Cuba, p. 99 (1850).—BREWER, Pr. Bost. Nat. Hist. VII, p. 308 (1860) (Cuba).
Tringites rufescens GUNDL. Repert. Fisico-Nat. Cuba, I, p. 355 (1866); *ib.* J. f. O. 1875, p. 325 (Cuba).—CORY, List Bds. W. I. p. 27 (1885).

Accidental in Cuba.

GENUS **Numenius** LINN.

Numenius LINNÆUS, Syst. Nat. 1746.

Numenius hudsonicus LATH.

Numenius hudsonicus LATH. Ind. Orn. II, p. 712 (1790).—LAWR. Ann. Lyc. N. Y. VIII, p. 100 (1867) (Sombrero); *ib.* Pr. U. S. Nat. Mus. I, p. 238 (1878) (Antigua); *ib.* p. 242 (Barbuda); *ib.* p. 277 (Grenada).—CORY, List Bds. W. I. p. 27 (1885).—WELLS, List Bds. Grenada, p. 8 (1886).

Numenius hudsonius GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 367 (1878) (Porto Rico).

Winter visitant to the Antilles.

Numenius borealis (FORST.).

Scolopax borealis FORST. Phil. Trans. LXII, p. 411 (1772).

Numenius borealis GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 367 (1878) (Porto Rico).—CORY, List Bds. W. I. p. 27 (1885).—WELLS, List Bds. Grenada, p. 8 (1886).

West Indies in winter; reported from Porto Rico and Grenada.

Numenius longirostris WILS.

Numenius longirostris WILS. Am. Orn. VIII, p. 24 (1814).—DENNY, P. Z. S. 1847 p. 39 (Jamaica).—LEMB. Aves Cuba, p. 88 (1850).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 68 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 352 (1866); *ib.* J. f. O. 1875, p. 320 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 197 (1878) (St. Vincent).—A. & E. NEWTON, Handb. Jamaica, p. 116 (1881).—CORY, List Bds. W. I. p. 27 (1885).

Greater Antilles in winter.

FAMILY CICONIIDÆ.

GENUS Tantalus LINN.

Tantalus LINNÆUS, Syst. Nat. 10th ed. 1758.

Tantalus loculator LINN.

Tantalus loculator LINN. Syst. Nat. I, p. 240 (1766).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 219 (1840).—DENNY, P. Z. S. 1847, p. 39 (Jamaica).—GUNDL. J. f. O. 1856, p. 348 (Cuba).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—

GUNDL. J. f. O. 1862, p. 83 (Cuba); *ib.* Repert. Fisico-Nat. Cuba, I, p. 351 (1866); *ib.* J. f. O. 1875, p. 313 (Cuba).—CORY, List Bds. W. I. p. 27 (1885).

Recorded from Cuba and Jamaica.

FAMILY IBIDIDÆ.

GENUS **Guara** REICH.

Guara REICHENBACH, Syst. Avium, 1852, p. xiv.

Guara alba (LINN.).

Scolopax alba LINN. Syst. Nat. I, 10th ed. p. 145 (1758).
Ibis alba DENNY, P. Z. S. 1847, p. 39 (Jamaica).—LEMB. Aves Cuba, p. 86 (1850).
Endocimus albus BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 352 (1866); *ib.* J. f. O. 1875, p. 315 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 364 (1878) (Porto Rico).—CORY, Bds. Haiti & San Domingo, p. 150 (1885); *ib.* List Bds. W. I. p. 27 (1885).

Common in most of the Greater Antilles.

Guara rubra (LINN.).

Tantalus ruber LINN. Syst. Nat. I, p. 241 (1766).
Ibis rubra D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 228 (1840).—GOSSE, Bds. Jam. p. 348 (1847).—DENNY, P. Z. S. 1847, p. 39 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 65 (Jamaica).
Endocimus ruber GUNDL. J. f. O. 1862, p. 83 (Cuba).—A. & E. NEWTON, Handb. Jamaica, p. 112 (1881).—CORY, List Bds. W. I. p. 27 (1885).

Recorded from Cuba and Jamaica.

GENUS **Plegadis** KAUP.

Plegadis KAUP, Skizz. Entuv. Gesch. p. 82, 1829.

Plegadis antumnalis (HASSELQ.).

Tringa autumnalis HASSELQ. Reise nach Paläst Deutsch Ausq. 1762, p. 306.
Tantalus falcinellus LINN. Syst. Nat. I, p. 241 (1766).
Ibis falcinellus LEMB. Aves Cuba, p. 87 (1850).

Falcinellus erythrorhynchus CAB. J. f. O. 1856, p. 349 (Cuba); *ib.* GUNDL. 1882, p. 84 (Cuba).

Falcinellus ordii BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 352 (1866); *ib.* J. f. O. 1875, p. 318 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 366 (1878) (Porto Rico).

Plegadis falcinellus CORY, List Bds. W. I. p. 27 (1885).

Accidental in the Greater Antilles.

Plegadis guarauna (LINN.) is claimed to have occurred in the West Indies, but I can find no satisfactory record of its capture.

FAMILY **Plataleidæ**.

GENUS **Ajaja** REICH.

Ajaja REICHENBACH, Handb. xvi, 1851.

Ajaja ajaja (LINN.).

Platalea ajaja LINN. Syst. Nat. I, 10th ed. p. 140 (1758); *ib.* 12th ed. p. 231 (1766).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 216 (1840).—GOSSE, Bds. Jam. p. 346 (1847).—GUNDL. J. f. O. 1856, p. 347 (Cuba).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas); *ib.* BREWER, p. 308 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 206 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 65 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 351 (1866); *ib.* J. f. O. 1875, p. 311 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 275 (1878) (Grenada) (?).—CORY, Bds. Bahama I. p. 164 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 112 (1881).—TRISTRAM, Ibis, 1884, p. 168 (San Domingo).

Platalea ajuga DENNY, P. Z. S. 1847, p. 39 (Jamaica).

Ajaja rosea CORY, List Bds. W. I. p. 28 (1885).

Resident in the Bahamas and Greater Antilles.

FAMILY PHŒNICOPTERIDÆ.

GENUS **Phœnicopterus** LINN.

Phœnicopterus LINNÆUS, 1748; *ib.* Syst. Nat. I, p. 230, 1766.

Phœnicopterus ruber LINN.

Phœnicopterus ruber LINN. Syst. Nat. I, 10th ed. p. 139 (1758); *ib.* 12th ed. p. 230 (1766).—GOSSE, Bds. Jam. p. 390 (1847).—DENNY, P. Z. S. 1847, p. 39 (Jamaica).—GUNDL. J. f. O. 1856, p. 342 (Cuba).—SALLÉ, P. Z. S. 1857, p. 236 (San Domingo).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 121 (1859) (Bahamas); *ib.* XI, p. 97 (1867) (San Domingo); *ib.* BREWER, VII, p. 308 (1860) (Cuba).—ALBRECHT, J. f. O. 1862, p. 206 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 65 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 386 (1866); *ib.* J. f. O. 1874, p. 314 (Porto Rico); *ib.* 1875, p. 368 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 398 (1878) (Porto Rico).—CORY, Bds. Bahama I. p. 180 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 112 (1881).—CORY, Bull. Nutt. Orn. Club, VI, p. 155 (1881) (Haiti).—TRISTRAM, Ibis, 1884, p. 168 (San Domingo).—CORY, Bds. Haiti & San Domingo, p. 165 (1885); *ib.* List Bds. W. I. p. 28 (1885).

Resident and not uncommon in the Bahamas and Greater Antilles.

FAMILY ARDEIDÆ.

GENUS Ardea LINN.

Ardea LINNÆUS, Syst. Nat. I, p. 233, 1766.

Ardea herodias LINN.

Ardea herodias LINN. Syst. Nat. I, p. 237 (1766).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 199 (1840).—GOSSE, Bds. Jam. p. 346 (1847).—A. & E. NEWTON, Ibis, 1859, p. 263 (St. Croix) (?).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 120 (1859) (Bahamas); *ib.* BREWER, p. 308 (1860) (Cuba).—SCL. P. Z. S. 1861, p. 81 (Jamaica).—GUNDL. J. f. O. 1862, p. 82 (Cuba).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 63 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 347 (1866).—LAWR. Ann. Lyc. N. Y. VIII, p. 98 (1867) (Sombrero).—SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 589 (St. Bartholomew); *ib.* p. 602 (Porto Rico).—GUNDL. J. f. O. 1875, p. 296 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 196 (1878) (St. Vincent); *ib.* p. 236 (Antigua); *ib.* p. 240 (Barbuda); *ib.* p. 274 (Grenada); *ib.* p. 359 (Martinique).—GUNDL. Anal. Soc. Esp. Hist. Nat. VII, p. 352 (1878) (Porto Rico).—SCL. P. Z. S. 1879, p. 765 (Montserrat).—CORY, Bds. Bahama I. p. 166 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).—CORY, List Bds. W. I. p. 28 (1885).—WELLS, List Bds. Grenada, p. 9 (1886).

Ardea herodias ALBRECHT, J. f. O. 1862, p. 206 (Jamaica).

This species ranges throughout the West Indies.

Ardea occidentalis AUD.

Ardea occidentalis AUD. Orn. Biog. III, p. 542 (1835).—LEMB. Aves Cuba, p. 82 (1850).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 63 (Jamaica).—A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).—CORY, List Bds. W. I. p. 28 (1885).

Herodias occidentalis BREWER, Pr. Bost. Soc. Nat. Hist. VIII, p. 308 (1860) (Cuba).

?Ardea wurdemannii MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 64 (Jamaica).

Audubonia occidentalis GUNDL. Repert. Fisico-Nat. Cuba, I, p. 348 (1866); *ib.* J. f. O. 1874, p. 313 (Porto Rico); *ib.* 1875, p. 298 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 354 (1878) (Porto Rico).

Recorded from Porto Rico, Cuba, and Jamaica.

Ardea egretta GMEL.

Ardea egretta GMEL. Syst. Nat. I, p. 629 (1788).—BRYANT, Pr. Bost. Soc. Nat. Hist. VIII, p. 120 (1859) (Bahamas); *ib.* X, p. 257 (1866) (Porto Rico).—SUND. Oefv. K. Vet. Akad. For. 1869, p. 602 (Porto Rico).—CORY, Bds. Bahama I. p. 167 (1880).—A. & E NEWTON, Handb. Jamaica, p. 111 (1881).—CORY, List Bds. W. I. p. 28 (1885).

Ardea alba D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 191 (1840).

Egretta luce GOSSE, Bds. Jam. p. 346 (1847) (?).—ALBRECHT, J. f. O. 1862, p. 206 (Jamaica).

Ardea abba DENNY, P. Z. S. 1847, p. 39 (Jamaica).

Herodias egretta GUNDL. J. f. O. 1856, p. 341 (Cuba).—BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—SCL. P. Z. S. 1861, pp. 70, 80 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 63 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 348 (1866); *ib.* J. f. O. 1875, p. 299 (Cuba).—LAWR. Pr. U. S. Nat. Mus. I, p. 241 (1878) (Barbuda) (?).—GUNDL. Anal. Soc. Esp. Hist. Nat. VIII, p. 355 (1878) (Porto Rico).

Herodias luce SALLÉ, P. Z. S. 1857, p. 236 (San Domingo).

Ardea leuce BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 97 (1867) (San Domingo).

Bahamas and Greater Antilles.

Ardea candidissima GMEL.

Ardea candidissima GMEL. Syst. Nat. II, p. 633 (1788).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 196 (1840).—BRYANT, Pr. Bost.

Soc. Nat. Hist. VII, p. 120 (1859) (Bahamas); *ib.* XI, p. 97 (1867) (San Domingo).—SCL. P. Z. S. 1879, p. 765 (Montserrat).—CORY, Bds. Bahama I. p. 167 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).—CORY, Bds. Haiti & San Domingo, p. 153 (1885); *ib.* List Bds. W. I. p. 28 (1885).—TRISTRAM, Ibis, 1884, p. 168 (San Domingo).

Egretta candidissima GOSSE, Bds. Jam. p. 336 (1847).—MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 63 (Jamaica).

Herodias candidissima SALLÉ, P. Z. S. 1857, p. 236 (San Domingo).—BREWER, Pr. Bost. Soc Nat. Hist. VII, p. 308 (1860) (Cuba).

Garzetta candidissima SCL. P. Z. S. 1861, p. 81 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).—GUNDL. Repert. Fisico-Nat. Cuba, I, p. 349 (1866); *ib.* J. f. O. 1875, p. 304 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 357 (1878) (Porto Rico).—LAWR. Pr. U. S. Nat. Mus. I, p. 66 (1878) (Dominica); *ib.* p. 196 (St. Vincent); *ib.* p. 236 (Antigua); *ib.* p. 274 (Grenada).—WELLS, List Bds. Grenada, p. 9 (1886).

Bahamas and Antilles.

Ardea rufa BODD.

Ardea rufa BODD. Tabl. P. E. p. 54 (1783).—CORY, Bds. Bahama I. p. 170 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).—CORY, Bull. Nutt. Orn. Club, VI, p. 154 (1881) (Haiti); *ib.* Bds. Haiti & San Domingo, p. 152 (1885); *ib.* List Bds. W. I. p. 28 (1885).

Ardea rufescens LEMB. Aves Cuba, p. 83 (1850).

Ardea cubensis LEMB. Aves Cuba, p. 84 (1850).

Herodias rufescens BREWER, Pr. Bost. Soc. Nat. Hist. VII, p, 308 (1860) (Cuba).—GUNDL. J. f. O. 1862, p. 82 (Cuba).

Herodias pealii BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—GUNDL. J. f. O. 1862, p. 82 (Cuba).

Dimigretta rufa MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 63 (Jamaica).

Demiegretta rufa GUNDL. Repert. Fisico-Nat. Cuba, I, p. 348 (1866); *ib.* J. f. O. 1875, p. 302 (Cuba).

Demiegretta pealii GUNDL. Repert. Fisico-Nat. Cuba, I, p. 348 (1866); *ib.* J. f. O. 1875, p. 301 (Cuba).

Bahamas and Greater Antilles.

Ardea cærulea LINN.

Ardea cærulea LINN. Syst. Nat. I, 10th ed. p. 143 (1758); *ib.* 12th ed. p. 238 (1766).—D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 201 (1840).—DENNY, P. Z. S. 1847, p. 36 (Jamaica).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 120 (1859) (Bahamas); *ib.* X, p. 257 (1866) (Porto Rico).—TAYLOR, Ibis, 1864, p. 171 (Porto Rico).—

SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 588 (St. Bartholomew); *ib. p.* 602 (Porto Rico). — ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia).—CORY, Bds. Bahama I. p. 171 (1880).—A. & E. NEWTON, Handb. Jamaica, p. 111 (1881). — CORY, Bull. Nutt. Orn. Club, VI, p. 155 (1881) (Haiti); *ib.* Bds. Haiti & San Domingo, p. 154 (1885); *ib.* List. Bds. W. I. p. 28 (1885). — TRISTRAM, Ibis, 1884, p. 168 (San Domingo).

"*Egretta nivea* GOSSE, Bds. Jam. p. 334 (1847)"?

Egretta cærulea GOSSE, Bds. Jam. p. 337 (1847).

Herodias cærulea BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).—GUNDL. J. f. O. 1862, p. 83 (Cuba).

Florida cærulea SCL. P. Z. S. 1861, p. 81 (Jamaica).—ALBRECHT, J. f. O. 1862, p. 205 (Jamaica). — MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 62 (Jamaica). — GUNDL. Repert. Fisico-Nat. Cuba, I, p. 349 (1866); *ib.* J. f. O. 1875, p. 305 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 357 (1878) (Porto Rico).— LAWR. Pr. U. S. Nat. Mus. I, p. 66 (1878) (Dominica); *ib.* p. 196 (St. Vincent); *ib.* p. 236 (Antigua); *ib.* p. 241 (Barbuda); *ib.* p. 274 (Grenada); *ib.* p. 359 (Martinique).—WELLS, List Bds. Grenada, p. 9 (1886).

Bahamas and Antilles.

Ardea virescens LINN.

Ardea virescens LINN. Syst. Nat. I, 10th ed. p. 144 (1758); *ib.* 12th ed. p. 238 (1766). — D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 203 (1840).—DENNY, P. Z. S. 1847 p. 39 (Jamaica).—BRYANT, Pr. Bost. Soc. Nat. Hist. VII, p. 120 (1859) (Bahamas). — SUNDEV. Oefv. K. Vet. Akad. For. 1869, p. 589 (St. Bartholomew); *ib.* p. 602 (Porto Rico).— CORY, Bds. Bahama I, p. 171 (1880); *ib.* Bull. Nutt. Orn. Club, VI, p. 155 (1881) (Haiti); *ib.* Bds. Haiti & San Domingo, p. 155 (1885); *ib.* List Bds. W. I. p. 28 (1885).—TRISTRAM, Ibis, 1884, p. 168 (San Domingo). — CORY, Ibis, 1886, pp. 472, 474, 475 (Barbadoes, La Desirade and Grand Terre); *ib.* Auk, III, p. 502 (1886) (Grand Cayman).

Herodias virescens GOSSE, Bds. Jam. p. 340 (1847). — ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).

Butorides virescens SALLÉ, P. Z. S. 1857, p. 236 (San Domingo). — A. & E. NEWTON, Ibis, 1859, p. 261 (St. Croix). — CASSIN, Pr. Acad. Nat. Sci. Phila. 1860, p. 378 (St. Thomas); *ib.* MARCH, 1864, p. 64 (Jamaica).— SCL. P. Z. S. 1871, p. 273 (Santa Lucia).—LAWR. Pr. U. S. Nat. Mus. I, p. 66 (1878) (Dominica); *ib.* p. 196 (St. Vincent); *ib.* p. 236 (Antigua); *ib.* p. 241 (Barbuda); *ib.* p. 275 (Grenada); *ib.* p. 359 (Martinique); *ib.* p. 460 (Guadeloupe). — SCL. P. Z. S. 1879, p. 765 (Montserrat). — ALLEN, Bull. Nutt. Orn. Club, V, p. 169 (1880) (Santa Lucia). — LISTER, Ibis, 1880, p. 44 (St. Vincent).—A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).—WELLS, List Bds. Grenada, p. 9 (1886).

Ocniscus virescens BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba). — GUNDL. Repert. Fisico-Nat. Cuba, I, p. 349 (1866); *ib.* J. f. O. 1875, p. 307 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 359 (1878) (Porto Rico).

Butorides brunnescens? MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 64 (Jamaica).

Ardea (*Butorides*) *virescens* BRYANT, Pr. Bost. Soc. Nat. Hist. XI, p. 97 (1867) (San Domingo).

Common throughout the Bahamas and Antilles.

Ardea brunnescens "GUNDL."

Ardea brunnescens "GUNDL. Mss." — LEMB. Aves Cuba, p. 84 (1850). — REICH. J. f. O. 1877, p. 255. — CORY, List Bds. W. I. p. 28 (1885).

Ocniscus brunnescens CAB. J. f. O. 1856, p. 344. — BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860). — GUNDL. Repert. Fisico-Nat. Cuba, I, p. 350 (1866); *ib.* J. f. O. 1875, p. 308.

Butorides brunnescens BAIRD, Bds. N. Am. p. 677 (1858); *ib.* Cat. Am. Bds. No. 494 (1859). — GUNDL. Ann. N. Y. Lyc. Nat. Hist. 1862, p. 271. — GRAY, Handl. Bds. III, p. 32 (1871). — BD. BWR. & RIDGW. Hist. N. Am. W. Bds. I, p. 49 (1884).

SP. CHAR. — Pilium and occipital crest greenish black, showing a green gloss in the light; whole throat and neck rich rufous brown, showing a tinge of orange brown on the chin; back feathers slaty gray; wing-coverts not margined with white, but showing slight brownish edgings; otherwise resembling *A. virescens*.

Length, 19.00; wing, 6.50; tail, 2.75; tarsus, 2.10; bill, 2.60.

HABITAT. Cuba.

Ardea tricolor ruficollis (GOSSE).

Ardea leucogastra D'ORB. in La Sagra's Hist. Nat. Cuba, Ois. p. 200 (1840).

Egretta ruficollis GOSSE, Bds. Jam. p. 338 (1847). — ALBRECHT, J. f. O. 1862, p. 205 (Jamaica).

Herodias ludoviciana BREWER, Pr. Bost. Soc. Nat. Hist. VII, p. 308 (1860) (Cuba).

Herodias ruficollis GUNDL. J. f. O. 1862, p. 83? (Cuba).

Demiegretta ludoviciana MARCH, Pr. Acad. Nat. Sci. Phila. 1864, p. 63 (Jamaica).

Demiegretta ruficollis GUNDL. Repert. Fisico-Nat. Cuba, I, p. 348 (1866); *ib.* J. f. O. 1875, p. 303 (Cuba); *ib.* Anal. Soc. Esp. Hist. Nat. VII, p. 356 (1878) (Porto Rico).

Ardea leucogastra var. *leucoprymna* CORY, Bds. Bahama I. p. 168 (1880).

Ardea ludoviciana A. & E. NEWTON, Handb. Jamaica, p. 111 (1881).

Ardea tricolor CORY, List Bds. W. I. p. 28 (1885).

Ardea cyanirostris CORY, Bds. Bahama I, p. 168 (1880). — ALLEN, Bull. Nutt. Orn. VII, p. 21 (1881).—CORY, List Bds. W. I. p. 28 (1885).
Ardea tricolor ruficollis CORY, Auk, III, p. 502 (1886).

Common in the Bahama Islands and Greater Antilles (breeds).

In originally naming *A. cyanirostris* I considered it distinct from *A. ruficollis*, from the totally different coloration of the bill and legs supposed to occur only in the breeding season. Since that time specimens have been taken in the winter months representing this same state of plumage. *A. tricolor* undoubtedly assumes a yellow bill during most of the year, even if Audubon was wrong in his statement to the effect that it had a yellow bill in the breeding season. It is probable that the two birds are identical, but it is also possible that the Bahama bird may be distinct, and colonies occasionally wander to Florida, where it has been found breeding. This would account for the blue-billed specimens being taken in Florida, and would not prove its specific identity with *A. tricolor*.

SUMMER BIRDS OF SANTA CRUZ ISLAND, CALIFORNIA.

BY ELI WHITNEY BLAKE, JR.

THE island of Santa Cruz is the second in size of the Santa Barbara group; it is twenty-four miles in length by about six in breadth, and lies twenty-three miles off shore, directly opposite the town of Santa Barbara. In general character the island is mountainous with a comparatively level valley between two lofty ridges near its centre; the highest peaks are 2600 feet above the sea. Santa Cruz is of course very dry in summer, although there is water in some of the cañons throughout the year. It is owned by a stock company and is used as a sheep ranch; the herders constitute the only human inhabitants. My stay upon the island comprised two visits, extending from July 4 to July 24, and from August 6 to September 3. Our camp was in a cañon near Platts' Harbor, on the northern side of the island.

1. **Cepphus columba.** PIGEON GUILLEMOT. — Common along the rocky shores up to July 24; *none* seen during my second visit. Probably breeds.

2. **Larus occidentalis**. WESTERN GULL.—Extremely abundant; nests on the isolated rocks along shore. Found many young.

3. **Larus heermanni**. HEERMANN'S GULL.—Less common than the preceding. Probably breeds; saw many young in the dark plumage.

4. **Sterna maxima**. ROYAL TERN.—Seen once.

5. **Phalacrocorax penicillatus**. BRANDT'S CORMORANT.—Abundant along shore; nests on isolated rocks.

6. **Phalacrocorax pelagicus resplendens**. BAIRD'S CORMORANT.—Less common than the preceding; probably breeds.

7. **Pelecanus californicus**. CALIFORNIA BROWN PELICAN.—Common off shore after August 14; none seen before that date. Very shy.

8. **Ardea herodias**. GREAT BLUE HERON.—Not uncommon along the rocky shores.

9. **Heteractitis incanus**. WANDERING TATTLER.—Common along the rocks.

10. **Arenaria melanocephala**. BLACK TURNSTONE.—Not uncommon after August 21. Taken on San Miguel in July by Mr. Streator, of Santa Barbara; these observations add 200 miles to the southerly range of the species as stated in the A. O. U. 'Check List.'

11. **Hæmatopus bachmani**. BLACK OYSTERCATCHER.—Common, and by no means shy; breeds on the outlying rocks.

12. **Zenaidura macroura**. MOURNING DOVE.—Common in the wooded cañons.

13. **Haliæetus leucocephalus**. BALD EAGLE.—Perhaps eight or nine different individuals seen and three empty nests, on island rocks.

14. **Ceryle alcyon**. BELTED KINGFISHER.—Common along shore.

15. **Colaptes ——**. FLICKER.—The Flicker of the island differs from typical *cafer* in that the scarlet malar patches of the male are replaced by cinnamon in the female; there is also other rusty-brown about the head; legs pale lilac. Not uncommon in the wooded cañons.

16. **Trochilus rufus**. RUFOUS HUMMINGBIRD.—Very common.

17. **Sayornis nigricans**. BLACK PHŒBE.—Common along the well-watered cañons.

18. **Empidonax difficilis**. BAIRD'S FLYCATCHER.—Very common up to July 24; nests in rocky caves; three or four nests found in this position.

19. **Otocoris alpestris ——**. HORNED LARK.—A variety of this bird inhabits the more exposed portions of the island; the worn and bleached plumage of my specimens precludes the possibility of determining them exactly.

20. **Aphelocoma insularis**. ISLAND JAY.—By far the commonest land-bird of the island, and familiar to the verge of impudence. General habits like those of its near relatives on the mainland. Several nests which must have belonged to this species were placed in trees or bushes between six and thirty feet from the ground. They exhibited no marked peculiarity of construction.

21. **Corvus corax sinuatus**. AMERICAN RAVEN.—Very common; feeds on the dead sheep. Nests on inaccessible cliffs, often at some distance from the sea.

22. **Carpodacus frontalis rhodocolpus.** CRIMSON HOUSE FINCH.—Quite common up to the middle of August. Nests in caves; one nest, containing three fresh eggs, found July 13.

23. **Spizella socialis arizonæ.** WESTERN CHIPPING SPARROW.—Not uncommon.

24. **Pipilo maculatus megalonyx.** SPURRED TOWHEE.—Very common in the hillside thickets.

25. **Chelidon erythrogaster.** BARN SWALLOW.—Very common; nests in caves.

26. **Lanius ludovicianus excubitorides.** WHITE-RUMPED SHRIKE.—Extremely common.

27. **Helminthophila celata lutescens.** LUTESCENT WARBLER.—Not uncommon in the wooded cañons.

NOTE.—I may also mention a small Wren, somewhat like *Thryothorus bewickii spilurus*, but with gray under-parts, wings faintly barred, and superciliary stripe obscure. It is very common in the cañons, and has a sweet song.

DESCRIPTION OF A NEW SUBSPECIES OF JUNCO FROM NEW MEXICO.

BY HENRY K. COALE.

Junco hyemalis shufeldti, sub. sp. nov.

Type, No. 106,035, Nat. Mus. Ad. ♂, Fort Wingate, N. M., Oct. 13, 1885; Dr. Robert W. Shufeldt, U. S. A.

Wishing to investigate a supposed difference in plumage between northern and southern California Juncos, I wrote to Professor Ridgway for the loan of some specimens of *Junco hyemalis oregonus*, which he kindly sent me. I could not make out what I hoped to in regard to the California bird, but five specimens from New Mexico at once attracted my attention. They were larger than the west coast specimens, with a peculiar mottling about the head and no distinct separation of the colors of the back and neck. Referring the matter to Professor Ridgway he writes: "I have examined carefully the specimens of *Junco hyemalis oregonus*, and agree with you that there are two well marked races. The *unnamed* one is that from the interior. This I am able to determine positively by examination of the original specimen collected by Townsend, and the basis of his *Fringilla oregona*, which is in our [Nat. Mus.] collection."

AVERAGE MEASUREMENTS OF FIVE AD. ♂ SPECIMENS FROM CALIFORNIA.

	Wing	Tail	Trs.	Bill
Junco hyemalis oregonus . .	2.91	2.62	.71	.40

FOUR AD. ♂ SPECIMENS FROM FORT WINGATE, N. M.

Junco hyemalis shufeldti . .	3.14	2.89	.73	.43

THREE AD. ♀ SPECIMENS FROM CALIFORNIA.

Junco hyemalis oregonus . .	2.74	2.44	.71	.40

ONE AD. ♀ FROM FORT WINGATE, N. M.

Junco hyemalis shufeldti . .	3.12	2.87	.72	.42

Description.

Junco hyemalis oregonus. Coast specimens, California. *Adult males.* Head and neck all round dull black, sharply defined from colors of the body; back clear rusty; rump slate; central rectrices dull black, slaty edges; belly and breast white; two outer rectrices white; a narrow white streak on inner web of third feather; faint rusty wash on sides. Bill and legs light.—*Female.* Head dull slaty black, blending with rusty color of back; sides quite rusty; outer tail-feather white; second with broad white streak.

Junco hyemalis shufeldti. Fort Wingate, New Mexico. *Adult males.* Head dull black; neck mottled and fading into dull brown on back and scapulars, which in turn fades into dark slate on rump and upper tail-coverts. Tail darker; two outer rectrices pure white; third with white streak on inside web, in several extending to end of feather. Centre of breast and belly white; sides slaty rufous.—*Female.* Colors more subdued, with more of the rufous washing on sides. A specimen in my collection (Mus. H. K. C. No., 7321) ♂, shot at Waukegan, Ill., Feb. 20, 1887, appears to be of this species. Measurements: Wing, 3.05; tail, 2.75; tarsus .74; bill, .40. Head and neck mottled and sides washed with rusty. Some sixty skins of the common *Junco hyemalis* taken at the same time do not show these characteristics, but agree with the typical *hyemalis.*

It gives me pleasure to name this new variety in honor of my esteemed friend Dr. Robert W. Shufeldt, U. S. A., who collected and presented the specimens to the National Museum.

ORNITHOLOGICAL CURIOSITIES.—A HAWK WITH NINE TOES, AND A BOBOLINK WITH SPURS ON ITS WINGS.

BY HENRY K. COALE.

IN presenting the following illustrations I wish to thank my friends who have kindly assisted me—Mr. Jos. L. Hancock, who

made the original drawings from the specimens; Mr. Henry L. Fulton, who transferred the drawings to the engraver's block, and Mr. Fred. Erby, the engraver, whose generosity I especially appreciate, as he refused to take a cent for his skilful handiwork, although the order was given him to make the woodcut and send in his bill.

RIGHT LEG, INSIDE VIEW. NATURAL SIZE.

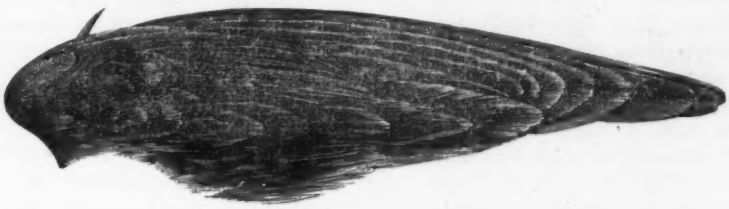
During the past fifteen years, I have devoted about two weeks in spring, a few days in fall, and a day or two in summer and winter in collecting bird skins. Out of some eight thousand specimens preserved I have only met with two abnormally developed individuals.

"No. 5924(Mus. H. K. C.), *Buteo latissimus* (Wils.), Broad-winged Hawk. ♂ shot in small woods half-mile S. E. of Grand Crossing, Ill., Sept. 6, 1884. Length, 14.75; extent, 32.50. Legs and feet yellow. Bill black, cere greenish. Iris yellowish buff. Stomach contained crayfish."

I regret that I did not send the fresh specimen in alcohol to Dr. Shufeldt for examination; a few critical notes from his pen would have been valuable in the present paper. I simply noted the following: The extra toe (of which the illustration is a perfect representation) grew out from the thigh, just above the ankle joint. It was not connected with the bone, but could be moved in any direction, seeming to grow from the muscles of the thigh. The upper bone slightly curved; one movable joint, a straight bone, and a perfect, movable claw. Color yellow, claw black, like the normal toes.

Professor Ridgway writes (1884) that the only bird in the National Museum collection having abnormal toes is a Gull. It is evidently a thing of rare occurrence, and further light on the subject from other collectors would be of interest.

"No. 7685 (Mus. H. K. C.), *Dolichonyx oryzivorus* (Linn.), Bobolink, ♂. Prairie, 1 mile west of S. Englewood, Ill., May 24, 1887." While collecting prairie birds with Mr. Amos W. Butler, I shot this specimen. On each wing is a horny spur, growing from the thumb tip.



The illustration shows the left wing, natural size. In both wings the spurs are exactly alike. We secured some twenty-three males and ten females the same day (Bobolinks being a rarity with Mr. Butler). This was the only specimen having spurs on the wings.

RECENT LITERATURE.

Ridgway's 'Manual of North American Birds.'*—The late Professor Baird long since projected a work on North American Birds which should serve as a manual and handy reference work for the sportsman and traveller as well as the naturalist. His great responsibilities and engrossing public duties, however, "precluded the possibility of his completing the work which he had so long cherished, and had even begun, when called to the high positions which he has filled with so much advantage to science and honor to himself." The work was therefore very naturally and fittingly intrusted to his pupil and collaborator in previous works on the

* A | Manual | of | North American Birds. | By | Robert Ridgway. | — | Illustrated by 464 outline drawings of the | generic characters. | — | Philadelphia: | J. B. Lippincott Company. | 1887.—Royal 8vo. pp. i-xi, 1-631. pll. i-cxxiv. (Reviewed from advance sheets, received from the Publishers, Aug. 5, 1887.)

same subject and his successor as Curator of the Department of Birds in the United States National Museum. It is needless to say that the work could scarcely have fallen into more trustworthy hands.

The object of the work, as stated in the preface, "is to furnish a convenient manual of North American Ornithology, reduced to the smallest compass, by the omission of everything that is not absolutely necessary for determining the character of any given specimen, and including, besides the current nomenclature of each species, a statement of its natural habitat and other concomitant data." Consequently the volume is made up of a series of analytical keys, covering all the various grades of groups from orders to subspecies. Under each genus, in case it contains more than a single species, are given the characters common to all the species, followed by the distinctive features of the various species and subspecies. In this way reiteration is reduced to a minimum, and the text compressed to the smallest practicable amount. In addition to the essential characters of the species and subspecies, however, their various stages of plumage are concisely indicated. The strictly biographical matter consists of a brief statement of the character of the nest and eggs, and the habitat.

The classification, nomenclature, and numeration "correspond strictly with the 'Check List of North American Birds' published by the American Ornithologists' Union." The species added or described since the publication of the 'Check List' have, however, been interpolated in their proper places, and besides these many extra-limital species have been included, but are distinguished from the strictly North American by being given in smaller type and without numeration. The geographical limits, so far as the numbered species are concerned, are those of the A. O. U. 'Check List'; "but practically these limits have been enlarged so as to include all the species known to inhabit Socorro Island, off the coast of Northwestern Mexico, which is decidedly *Nearctic*, or North American, in its zoölogical affinities, while in many cases other extra-limital species have been included, for the sake of comparison and also on account of the greater or less probability of their occurrence within the southern boundary of the United States," or in Alaska. These extra-limital species, however, include many not likely to be found within the United States, since the Mexican, Central American, Cuban, and Bahaman species of characteristically North American genera, and the genera of these regions belonging to North American families, are also embraced, as are also all the species of the order Tubinares belonging to genera which have representatives in North American waters. While these inclusions, apparently several hundred in number, have greatly increased not only the size of the work but the labor of preparing it, they add immensely to its value and interest.

The 'Manual' is based primarily upon the collection of the National Museum, but all the leading ornithological collections of the country, both public and private, have been drawn upon for additional material, including some unique and many type specimens, for which due acknowl-

edgements are made, as well as to Dr. Leonhard Stejneger for aid in settling vexed questions of synonymy and difficult problems of relationship. The nearly 500 outline drawings of generic characters are grouped at the end of the volume in 124 plates.

It appears from the 'Appendix' (pp. 591-594) that four new subgenera, and thirty-nine new species and subspecies are described in the work, of which *fourteen* of the species and subspecies are from North America, as defined in the A. O. U. 'Check-List'; the rest being from Mexico, Central America, and the Bahamas. Besides the fourteen species and subspecies described as new to North America, *thirty-one* others not included in the A. O. U. 'Check-List,' are given as North Americans; eight of these are introduced species; eleven have been described since the publication of the 'Check-List'*; seven have been added on the ground of actual capture since the 'Check-List' appeared, and four are forms ignored as nominal in making up the 'Check-List.' On the other hand, two recognized in the 'Check-List' are here "cancelled." It further appears that twelve technical names have undergone change, usually through the discovery of tenable names given prior to those adopted in the 'Check-List,' but in some instances through corrections of indentification.

Æstrelata gularis of the 'Check-List' becomes *Æ. scalaris* Brewst.; *Somateria mollissima* becomes *S. m. borealis* (Brehm), the American form being now considered subspecifically distinct from the European; *Ardea rufa* becomes *A. rufescens* Gm., the name *rufa* proving to be preoccupied; the subgenus *Nycticherodius* becomes *Nyctinassa* Stejn., the former name being preoccupied; the subgenus *Rhyacophilus* is replaced by *Helodromas* Kaup; the genus *Ulula* becomes *Scotiaptex* Sw., the use of the name *Ulula*, in this connection, having been found to be an error; *Dryobates scalaris* is now *D. s. bairdi* (Scl.), the form in question proving to be not true *scalaris; D. stricklandi* becomes *D. arizonæ* (Harg.) (see Auk, III, p. 426); *Contopus borealis* is made the type of a new subgenus *Nuttallornis; Molothrus æneus* is placed in the genus *Callothrus* Cass.; *Pinicola enucleator* appears once more as *P. e. canadensis* (Cab.); *Carpodacus frontalis* becomes *C. mexicanus frontalis;* for the genus *Certhiola* it is proposed (in the 'Appendix,' p. 590) to substitute the name *Cæreba*, on the ground of priority.

The 'new' species and subspecies characterized as North American are *Coccyzus americanus occidentalis*, from "Western United States, north to Oregon, east to New Mexico and Colorado, south over table-lands of Mexico"; *Coccyzus maynardi*, "Bahamas and Florida Keys"; *Aphelocoma californica hypoleucus*, "Lower California"; *Corvus corax principalis* =*Corvus carnivorus* Bartr., "*nomen nudum*" (but what is the objection to *C. corax carnivorus* (Bd.)?); *Corvus americanus hesperus*, "Western United States, north to Washington Territory (Puget Sound), Idaho, Montana, etc., south to Northern Mexico, east to Rocky Moun-

* Exclusive of one described in 'The Auk' for July, 1887—too late doubtless for notice in the 'Manual.'

tains"; *Agelaius phœniceus sonoriensis*, "Northwestern Mexico and Lower Colorado Valley, in Southern California and Arizona; south to Mazatlan"; *Agelaius phœniceus bryanti*, "Bahamas and Southern Florida (Miami, Key West, etc.)"; *Pinicola enucleator kadiaka*, "Kodiak to Sitka, Alaska," and "probably southward to higher Sierra Nevada of California"; *Carpodacus mexicanus* (*frontalis* in the text, p. 291) *ruberrimus* (provisionally separated) Lower California; *Plectrophenax nivalis townsendi*, "Prybilof Islands, Alaska, and Commander Islands, Kamtschatka"; *Passerina versicolor pulchra*, "Lower California and Western Mexico"; *Lanius ludovicianus gambeli*, "California, especially coast district"; *Phalænoptilus nuttalli californicus* (provisionally separated), Northern California; *Parus stoneyi*, Northwestern Alaska.

Old forms rejected from the 'Check-List' but here reinstated are *Cyanocitta stelleri annectens* Bd., *Guiraca cærulea eurhyncha* Cs., *Progne cryptoleuca* Bd., *Vireo gilvus swainsoni* Bd., and *Columbigallina passerina pallescens* Bd. The two excluded are *Carpodacus frontalis rhodocolpus* (now believed to be merely an individual color-phase), and *Peucæa arizonæ* Ridgw.= *P. mexicanus* (Lawr.).

Colinus virginianus cubanensis is accredited to "Cuba and Southwestern Florida," and is hence enumerated as North American.

A copious and carefully prepared index closes the volume, which must long reflect honor upon its author.—J. A. A.

Olphe-Galliard's Ornithology of Western Europe.*—In this work the veteran French ornithologist deposits the results of the labors and studies of a long and useful life. The plan is one of considerable magnitude, inasmuch as he contemplates giving not only full descriptions, synomymies, and biographies of all the species inhabiting Southwestern Europe (embracing Portugal and Spain, with the Azores and the Baleares, France, French Switzerland, all the country to the west of the Rhine, and the English Channel Islands) but also such species as are nearly related to, or may be easily confounded with, the birds inhabiting the region particularly treated of. In this way the account of several genera has grown into monographs which will be found to contain material useful also to other ornithologists than those who are most directly interested in the particular ornis referred to.

The work will be issued in 40 parts, or fascicules, each comprising one or more groups or families, and each one is separately paged. This is certainly a great drawback, but was necessary in order to secure a speedy publication, as the parts are issued immediately after having been finished

* Contributions | a la | Faune Ornithologique | de | L'Europe Occidentale | — Recueil | comprenant | les espèces d'oiseaux qui se reproduisent dans cette région | ou qui s'y montrent régulièrement de passage | augmenté | de la description des principales espèces exotiques | les plus voisines des indigènes | ou susceptibles d'être confondues avec elles | ainsi que l'énumération des races domestiques | Par Léon Olphe-Galliard.—8°

by the author irrespective of their place in the system. On the other hand, the arrangement is convenient to those who only want to purchase some of the monographs, as each fascicule is sold separately.

In our days of systematic uncertainty it is perhaps not to be wondered at that Mr. Olphe-Galliard still in the main adheres to the "natural system" which he proposed just thirty years ago, in pre-Darwinian times. It commences with the swimmers, runs through waders, birds of prey, Scansores, and Passeres, to Pigeons and game birds, and ends with the Ostriches, the object being to establish a lineal system which would represent the birds as forming a continuous chain between the "lower vetebrates" and the mammals.

American ornithologists will note with satisfaction that Mr. Olphe-Galliard has selected the year 1758 for his starting point in regard to the nomenclature, and that he declares for a strict adherance to the law of priority. We remark, however, that he adopts generic names previously applied in another class of animals, a course opposite to most previous codes of nomenclature, and also to Canon XXXIII, A. O. U. Code. Nor is the law of priority always respected as it ought to be. For instance, he accepts *Clivicola* of Forster as the older name, but refuses to recognize the same author's genera *Hirundo* and *Chelidon*, though their status in regard to Boie's subsequent appellations is exactly the same as that of *Clivicola*.

Want of space prevents us from entering into a detailed review, which may be reserved until the whole work is concluded. That the latest sources have not always been accessible to the author is hardly to be criticized when we know that the work has been prepared in a small provincial town far from the great libraries and museums. On the other hand, it is but just to mention that the author's great familiarity with foreign languages and literature is shown to great advantage throughout the book, and is the more to be appreciated since it is of so rare occurrence among the French ornithologists.

France has contributed very little to European ornithology during recent years, and the present work is really the only larger contribution since the publication of Degland and Gerbe's 'Ornithologie Européenne' twenty years ago.

The present work appears to be published entirely at the expense of the author, and its completion, therefore, depends upon the encouragement of the ornithological public expressed in numerous subscriptions, of which there ought to be no lack, as the price is very reasonable. The following fascicules have come to hand: I, Brevipennes (1884); V, Cygnidæ, and XXXIII, Ploceidæ (genus *Passer!*) (1885); XXXVII-XL, Gallinæ, and Cursores (1886); XXII, Brevipedes (1887).—L. S.

Minor Ornithological Publications.— 'Forest and Stream,' Vols. XXVI and XXVII, contains the following (Nos. 1127–1199):—

1127. *Winter Snipe in Colorado.* By R. V. R. S. *Forest and Stream*, Vol. XXVI, No. 1, Jan. 26, 1886, p. 5.—Wilson's Snipe reported as occurring about warm spring holes in the coldest winter weather.

1128. *English Sparrow as Egg Robber.* E. D. Bowles. *Ibid.*, p. 5, Jan. 28, 1886.

1129. *Cardinal Bird in New York in Winter.* By C. P. *Ibid.*, No. 2, Feb. 4, 1886, p. 24.—Seen on several occasions in Central Park.

1130. *The Audubon Society.* Editorial. *Ibid.*, No. 3, Feb. 11, p. 41; No. 4, Feb. 18, p. 61.—Its formation proposed, and the work it is intended to do.

1131. *The Audubon Society. Ibid.*, No. 5, Feb. 25, pp. 83, 84.—Editorial remarks and letters on the Audubon Society.

1132. *Birds and Bonnets.* Frank M. Chapman. *Ibid.*, No. 6, Feb. 25, p. 84.—List of birds seen on ladies' hats in an afternoon's walk in New York City.

1133. *A Bill for Bird Protection. Ibid.*, No. 5, Feb. 25, p. 84.—The first appearance in print of the A. O. U. Committee's proposed bill.

1134. *The Audubon Society. Ibid.*, No. 6, March 4, pp. 103–104.—Editorial remarks and extracts from the A. O. U. Committee's 'Bulletin No. 1,' as published in 'Science,' followed by various letters on the work of the Society. See further, on the subject of the Audubon Society, No. 7, March 11, p. 124; No. 8, March 18, p. 141; No. 9, March 18, p. 144; No. 10, April 1, p. 182; No. 11, April 8, p. 201, 203; No. 12, April 15, p. 222; No. 13, April 22, p. 243; No. 14, April 29, p. 262; No. 15, May 6, p. 283; No. 17, May 20, p. 327; No. 18, May 27, p. 347; No. 23, July 1, p. 447; No. 24, July 8, p. 467; No. 25, July 15, p. 487.

1135. *The Feather Industry.* Editorial. *Ibid.*, No. 9, March 25, pp. 162, 163.—On the extent of the traffic in birds for millinery purposes.

1136. *The Ivory-Billed Woodpecker.* By Horace A. Kline. *Ibid.*, No. 9, March 25, p. 163.—Taken near St. Mark's River, Florida.

1137. *Hawks and Owls. Beneficial or Injurious? Ibid.*, No. 9, March 25, pp. 163, 164. Report of a committee of the West Chester (Pa.) Microscopical Society on the good and bad traits of these birds, including letters on the subject from Dr. C. Hart Merriam, Robert Ridgway Dr. Leonhard Stejneger, H. W. Henshaw, and L. M. Turner.

1138. *Taxidermists and Milliners' Agents.* By Raymond Lee Newcomb. *Ibid.*, No. 10, April 1, p. 183.

1139. *The Sparrow Hawk in Winter.* By H. W. Henshaw. *Ibid.*, No. 12, April 15, p. 223.—On its food in winter.

1140. *A Least Bittern's Nest in a Tree.* F. L. T. *Ibid.*, No. 12, April 15, p. 223.

1141. *Sparrow Hawks Wise and Foolish.* By M. G. Ellzey. *Ibid.*, No. 13, April 22, p. 224.—On its food in winter, in answer to Mr. Henshaw. (See above, No. 1139.)

1142. *The Sparrow Hawk's Services.* By A. (=H.] W. Henshaw. *Ibid.*, No. 14, April 19, p. 263. (Under the same title is a note also by Henry Litchfield West.)—In answer to the last (No. 1141).

1143. *Tame Ruffed Grouse.* By M. H. Cryder. *Ibid.*, No. 15, May 6, p. 284.—A frequent visitor to the dooryard, and so tame as to take food from the hand.

1144. *The Birds of Michigan.* By Dr. Morris Gibbs. *Ibid.*, No. 16, May 13, pp. 305, 306; Vol. XXVII, No. 7, Sept. 9, pp. 123, 124; No. 12, Oct. 14, pp. 223–224.

1145. [*Destruction of Pigeons in Pennsylvania.*] Editorial. *Ibid.*, No. 16, May 13, p. 802.—"Thousands and tens of thousands" killed on their nesting grounds.

1146. *The Sparrow Hawk.* By M. G. Ellzey, M. D. *Ibid.*, No. 16, May 13, p. 304.—A second reply to Mr. Henshaw (see above, No. 1142), respecting the Sparrow Hawk as a destroyer of grasshoppers, etc.

1147. *Eagles* [*Haliæetus leucocephalus*] *breeding in Captivity.* By Henry Hulce. *Ibid.*, No. 17, May 20, p. 327.

1148. *Habits of the* [*Bald*] *Eagle.* By Henry Hulce. *Ibid.*, No. 19, June 3, p. 369.

1149. *Wildfowl of Western Waters.* By Junius P. Leach. *Ibid.*, No. 18, May 27, p. 348; No. 19, p. 370.—Valuable information respecting the Cranes, Swans, Geese, and Ducks.

1150. *A Note about Audubon. Ibid.*, No. 19, June 3, p. 369.—Extract from a private letter, written Jan. 2, 1841, by Lewis Warriner.

1151. *Birds of Central Park, New York* [*City*]. *A Preliminary List.* By Lewis B. Woodruff and Augustus G. Paine, Jr. *Ibid.*, No. 20, June 10, pp. 386, 387.—A briefly annotated list of 121 species. The European Goldfinch (*Carduelis elegans*) is given as "Resident; common; breeds." (See also *Ibid.*, No. 25, July 15, p. 488.)

1152. *The Toledo Eaglet.* By E. D. Potter. *Ibid.*, No. 20, May 10, p. 387.—Bred in confinement. (See above, No. 1148.)

1153. *Additions to California Avifauna.* By Walter E. Bryant. *Ibid.*, No. 22, June 24, p. 426.—The additions are *Porzana noveboracensis, P. carolina, Anas penelope*, and *Selasphorus floressii* (Loddiges).

1154. *The Toledo Eaglet.* By Henry Hulce. *Ibid.*, No. 22, June 24, p. 426. (See above, Nos. 1148 and 1152.)

1155. *Swifts, Humming Birds and Goatsuckers.* By R. W. Shufeldt. *Ibid.*, No. 23, July 1, p. 447.—On the relationship of these birds, and an appeal for aid in obtaining material for investigation.

1156. *Barn Owl in Ohio.* By A. Hall. *Ibid.*, No. 23, July 1, p. 446.

1157. *Two Hints in Taxidermy.* By W. E. B[ryant]. *Ibid.*, No. 24, July 8, p. 467.—(1) Strengthening the neck in small birds as well as large ones, by using a splinter of wood (as a hard-wood toothpick) in small birds, and a piece of wire or wood in larger ones; (2) the use of absorbent cotton for filling the skins.

1158. *Occurrence of the Ivory Gull at Halifax,* [*N. S.*]. By J. Mathew Jones. *Ibid.*, No. 25, July 15, p. 487.

1159. *Disappearance of the Bobolink* [*at Springfield, Mass.*]. By E. H. Lathrop. *Ibid.*, No. 26, July 22, p. 507.

1160. *Early Occurrence of the Great White Egret at Washington, D. C.* By C. Hart Merriam. *Ibid.*, No. 26, July 22, p. 508.—Taken July 15, 1886.

1161. *The Shore Birds.* By X. Y. Z. [=R. L. Newcomb]. *Ibid.*, No. 26, July 22, p. 509.—Dates of their arrival at Salem, Mass., in July 1886.

1162. *Prairie Fires and the [Pinnated] Grouse.* Editorial. *Ibid.*, Vol. XXVII, No. 1, July 21, 1886, p. 1.—The number of the birds sadly diminished by the late 'burning over' of prairie lands.

1163. *Bird Protection.* Editorial. *Ibid.*, No. 1, July 29, p. 4.—The blanks prepared for use by the American Museum of Natural History in issuing permits for collecting under the New York law are published, with editorial comment.

1164. *[Disappearance of] the Bobolink [in Central New York.]* By Portsa. *Ibid.*, No. 1, July 29, p. 4.

1165. *The Toledo Eaglet.* By Henry Hulce. *Ibid.*, No. 1, July 29, p. 4.—A further account of the Bald Eagle, hatched and reared in confinement. (See above, No. 1152.)

1166. *Cerros Island.* By Walter E. Bryant. *Ibid.*, No. 4, Aug. 19, pp. 62-64.—An interesting account of the Island, followed by an annotated list of the birds observed there, numbering 27 species.

1167. *The Audubon Society.* Editorial. *Ibid.*, No. 4, Aug. 19, p. 64.—Its incorporation, including 'Certificate of Incorporation.'

1168. *Occurrence of Turkey Buzzard on Long Island.* By Robert B. Lawrence. *Ibid.*, No. 4, Aug. 19, p. 64.—Seen at Flushing, Aug. 2, 1885.

1169. *The Future for American Ornithology.* By R. W. Shufeldt. *Ibid.*, No. 5, Aug. 26, p. 84.—A paper read before the Ridgway Ornithological Club of Chicago, Aug. 12, 1886, calling attention to useful lines of ornithological investigation, etc.

1170. *Bird Migration.* By B. Horsford. *Ibid.*, No. 6, Sept. 2, p. 103.—Pessimistic remarks on ornithological matters in general.

1171. *Two Indian Bird Stories.* L. W. Shultz. *Ibid.*, No. 6, Sept. 2, p. 104.—Folk-lore stories of the Woodpecker and Hawk.

1172. *The Audubon Society.* Editorial. *Ibid.*, No. 6, Sept. 2, p. 104; No. 10, p. 184; No. 19, Dec. 2, p. 361.

1173. *Can Birds Count Their Eggs.* By J. L. Davison. *Ibid.*, No. 6, Sept. 2, p. 104.

1174. *Spotted Sandpiper Swimming.* By H. A. Kline. *Ibid.*, No. 8, Sept. 16, p. 145.

1175. *John James Audubon.* By Charles Lanman. *Ibid.*, No. 9, Sept. 23, pp. 162, 163.

1176. *Economic Ornithology and Mammalogy. Ibid.*, No. 10, Sept. 30, p. 185.—The Circulars asking for information on the economic relations of birds and mammals, issued by the Chief of Division of Economic Ornithology and Mammalogy of the U. S. Department of Agriculture.

1177. *Wild Turkey Domestication.* By N. A. T. *Ibid.*, No. 11, Oct. 7, p. 204.

1178. *A Use for Falconry.* Editorial. *Ibid.*, No. 13, Oct. 21, p. 241.—Trained Hawks suggested as a means of protecting the rice fields from the depredations of the Ricebirds.

1179. *The Sport of Hawking.* By R. W. Seiss. I, II. *The Peregrine Falcon. Ibid.*, No. 13, Oct. 21, p. 243; No. 14, Oct. 28, p. 263;

III. *The Gyrfalcon.* No. 15, Nov. 4, pp. 282, 383; IV. *The Lanier Falcon.* No. 16. Nov. 11, pp. 202, 203; V. *The American Merlin and Kestril.* No. 21, Dec. 16, pp. 403, 404.—On the rearing, training and management of Falcons for use in hawking, with illustrations.

1180. *Maryland Bird Notes.* By J. Murray Ellzey. *Ibid.*, No. 14, Oct. 28, p. 264.—A Hudsonian Godwit shot at West River, Md.

1181. *Snipe Decoration.* Editorial. *Ibid.*, No. 15, Nov. 4, p. 281.—Use of Snipe and migratory game birds for millinery purposes, in lieu of song birds.

1182. *That Thieving Rice Bird.* By Chas. F. Amery. *Ibid.*, No. 15, Nov. 4, pp. 283, 284.—On its probable utility as well as destructiveness.

1183. *Protection of Birds by Legislation.* Bulletin No. 2 of the A. O. U. Committee on Bird Protection. *Ibid.*, No. 16. Nov. 11, pp. 304, 305.

1184. *American Ornithologists' Union.* Editorial. *Ibid.*, No. 17, Nov. 18, p. 322, and No. 18, Nov. 25, p. 341.—Brief account of the annual meeting for 1886.

1185. *Capture of an Eider Duck.* By L. S. Foster. *Ibid.*, No. 17, Nov. 18, p. 323.—A young male *Somateria dresseri* shot Nov. 8, 1886, at Center Moriches, Long Island, N. Y.

1186. *Shore Bird Nomenclature.* By J. C. Cahoon. *Ibid.*, No. 18, Nov. 25, p. 343. See also No. 19, Dec 2, p. 363.

1187. *Snowy Owl in Illinois.* By H. A. Kline. *Ibid.*, No. 18, Nov. 25, p. 343.—An early record—Nov. 13, 1886.

1188. *Weapons in Game.* By Sancho. *Ibid.*, No. 18, Nov. 25, p. 343.—An ivory arrowhead in the breast of a Goose taken in Yolo Co., Cal.

1189. *A Golden Eagle in Connecticut.* By Inquirer. *Ibid.*, No. 19, Dec. 2, p. 362.—Taken near Stamford about Nov. 1, 1886.

1190. *Shore Bird Nomenclature.* By John Murdock. *Ibid.*, No. 20, Dec. 9, p. 382.

1191. "*Weapons in Game.*" By John Murdock. *Ibid.*, No. 20, Dec. 9, p. 383.—In reply to 'Sancho' (See above, No. 1188); the ivory arrowhead identified as of Eskimo origin.

1192. *Song Bird Legislation.* By John D. Collins. *Ibid.*, No. 21. Dec. 16, p. 402.—An absurd arraignment of the New York law for the protection of birds.

1193. *Long Island Bird Notes.* By Robert B. Lawrence. *Ibid.*, No. 22, Dec. 23, p. 428.—Notes on 4 species—*Tringa maritima*, *Somateria dresseri*, *Oceanites oceanicus*, and *Nyctala acadica*.

1194. *Arizona Bird Notes.* By Herbert Brown. *Ibid.*, No. 24, Jan. 6, 1887, p. 464.—An interesting paper, relating chiefly to the winter birds.

1195. *Clark's Crow in British Columbia.* By John Fannin. *Ibid.*, No. 24, Jan. 6, 1887, p. 464.

1196. *Florida Bird Notes. Eagles, Hawks and Owls.* By Horace A. Kline. *Ibid.*, No. 25, Jan. 13, p. 484.—Contains nearly a column and a half on the nesting of the Bald Eagle, and interesting notes on several Hawks and Owls.

1197. *The Terns of Matinicus Rock*, [*Coast of Maine*]. By Wm. G.

Grant. *Ibid.*, No. 25, Jan. 13, p. 485.—On the wholesale slaughter of Terns at this point for millinery purposes by C. E. Cahoon, of Taunton, Mass., during the season of 1886.

1198. *Avian Tuberculosis in the Ruffed Grouse.* By Morton Grinnell, M. D. *Ibid.*, No. 26, Jan. 20, p. 503.

1199. *Migrating Meadow Larks.* By J. H. D. *Ibid.*, No. 26, Jan. 20, pp. 503, 504.—J. A. A.

Publications Received.—**Berlepsch**, Hans von. Systematisches Verzeichniss der von Herrn Ricado Rohde in Paraguay gesammelten Vögel und Appendix Systematisches Verzeichniss der in der Republik Paraguay bisher beobachteten Vogelarten. (Separat. aus Journ. f. Orn., 1887, pp. 134 et seq.)

Blakiston, T. W. Water-Birds of Japan. (Proc. U. S. Nat. Mus., 1886, pp. 652-660.)

Bryant, Walter E. (1) Description of a new subspecies of Petrel from Guadalupe Island. (Bull. Cal. Acad. Sci. II, No. 8, 1887.) (2) Discovery of the nest and eggs of the Evening Grosbeak (*Coccothraustes vespertina*). (Ibid.) (3) Unusual Nesting Sites. (Ibid.)

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Nazarow, P. S. Recherches zoologiques des Steppes des Kirguiz. Avec carte et préface de M. Menzbier. (Ibid., 1866.)

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Med. & Surg., July, 1887.) (3) Observations upon the Habits of Micropus melanoleucus, with Critical Notes on its Plumage and External Characters. (Ibis, 1887, pp. 151-158, pl. v.) (4) Audubon's Grave. (Science, X, No. 238.) (5) A Chapter on Pterylography. (Forest and Stream, Aug. 25, 1887.) (6) The Pied Duck. (Ibid., Aug. 18, 1887.)

Stejneger, L. (1) Review of Japanese Birds. IV, Synopsis of the genus Turdus. (Proc. U. S. Nat. Mus., 1887, pp. 4, 5.) (2) Birds of Kanai, Hawaiian Archipelago, collected by Mr. Valdemar Knudsen, with Descriptions of New Species. (Ibid., pp. 75-102.) (3) Notes on the Northern Palæarctic Bullfinches. (Ibid., pp. 103-110.) (4) Revised and Annotated Catalogue of the Birds inhabiting the Commander Islands. (Ibid., pp. 117-145, pll. vi-ix.) (5) Description of a New Species of Fruit Pigeon. (Am. Nat. June, 1877.) (6) A New Species of Thrush from Japan. (Science, X, No. 238.)

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GENERAL NOTES.

Merganser americanus breeding in New Mexico.—On and near the head of the Pecos River, New Mexico (latitude 35° 45′, elevation 6800 feet), I saw, July 2, 1885, a female American Merganser, with four little ones not over ten days old. I fail to find any record of the birds' breeding so far south, therefore think the 'find' worthy of mention.—N. S. Goss, *Topeka, Kan.*

The Clapper Rail again in Massachusetts. — I have the pleasure of hereby presenting for record a third example of *Rallus longirostris crepitans* obtained in this State; and at a remarkably late date in the season.

The bird was taken in a small pond-hole in 'Rocky Nook,' Kingston, on Dec. 29, 1885. It was in fair condition, showing no sign of being crippled.

It is now in possession of W. C. Hathaway of Plymouth, to whom I am indebted for above particulars.

The dates and places of the previous authentic records are: May 4, 1875, Boston Harbor (*Purdie*, Bull. Nutt. Orn. Club, 1877, p. 22), and October, 1879. Plymouth (*Brewster*, Bull. Nutt. Orn. Club, 1881, p. 62).—F. C. Browne, *Framingham, Mass.*

Ictinia mississippiensis and Ægialitis nivosa nesting in Southern Central Kansas.—While collecting in this State, I found, May 9, 1887, quite a number of the Mississippi Kites sailing over and into the timber skirting the Medicine River, near Sun City, Barber County, and from their actions knew that they were mating and upon their breeding grounds, —a lucky find worth following up. On the 11th I noticed several of the birds with sticks in their bills (green twigs in leaf), flying aimlessly about as if undecided where to place them, keeping hidden within the trees as much as possible, dropping the sticks when from fright or other cause they raised much above the tree tops. I succeeded, however, in tracing one of the birds to an old nest in the forks of a cottonwood; having thus located the birds, and knowing that it must be some time before they would begin to lay, I left for the salt plains on the Cimarron River, in southwestern Comanche County and in the Indian Territory, where I found the Snowy Plover quite abundant. (See Auk, Vol. III, No. 3, p. 409, in regard to finding the birds nesting in the same vicinity last season.) I returned to the Kites on the 16th, and remained watching the birds until the morning of the 22d, at which time the nests found, seven in number, appeared to be completed, and I saw a pair of the birds in the act of copulation. A business matter called me home, and I hired the man with whom I stopped to climb the trees on the 28th for the eggs, but a hailstorm on the 25th injured the nests badly, and in one case beat the nest out of the tree. On the 31st he collected four sets of two eggs each and one with only one egg—it being a hard tree to climb he decided to take the egg rather than wait to see if the bird would lay more. Not hearing from him

I returned to the ground June 10, and put in the day examining the nests, etc., collecting two more sets of two eggs each. One of the sets was nearly ready to hatch, but with care I was able to save it. The eggs are all white, or rather bluish white, without markings or shell stains. It having rained nearly every day since the commencement of the month, the two last sets collected are somewhat soiled and stained by the wet leaves in the nests. The eggs measured by sets as follows, viz.: 1st, 1.55 × 1.33, 1.52 × 1.36; 2nd, 1.76 × 1.48, 1.65 × 1.35; 3d, 1.70 × 1.39, 1.56 × 1.35; 4th, 1.70 × 1.37, 1.68 × 1.30; 5th, 1.75 × 1.30; 6th, 1.54 × 1.31, 1.45 × 1.24; 7th, 1.70 × 1.38, 1.68 × 1.43. The old nests had a few leaves for lining in addition to the leaves attached to the twigs used in repairing the same, but the new ones appeared to be without additional leaves. They were all built either in the forks from the main body, or in the forks of the larger limbs of the cottonwood and elm trees, and were at least from ten to a hundred rods apart, were not bulky, and when old would be taken for the nests of the common Crow. They ranged in height from twenty-five to fifty feet from the ground.—N. S. Goss, *Topeka, Kan.*

The Merlin (*Falco æsalon*) in Greenland.—We have recently received from Dr. C. F. Wiepken, of the Museum of Oldenburg, Germany, a fine specimen of *Falco æsalon* Lath., from Greenland. This makes an additional species for the fauna of North America, I believe.

The record is as follows: "*Falco æsalon* Lath. ♂ juv. Shot at Cape Farewell, Greenland, May 3, 1875." It is *æsalon* without any question—a young of the preceding year. We got it with other specimens from the same locality through Dr. W., and I have no reason whatever to doubt the correctness of the label, as of the hundreds we have received from him I have not as yet detected any discrepancies, and the labels are usually much more minute than the above. Gov. Fencker, who was stationed at Godhavn, Greenland, as Governor when I was there, told me he had occasionally seen a small Hawk between Juliansh aab and Gothaab, but had failed to secure a specimen. These were probably *F. æsalon*. — LUDVIG KUMLIEN, *Public Museum, Milwaukee, Wis.*

Notes on Melanerpes formicivorus bairdi in New Mexico. — To-day is the 6th of August (1887), and while out collecting at a point some two miles from Fort Wingate, New Mexico, I shot and secured a fine adult male specimen of this Woodpecker, and in unusually good plumage for this time of the year, with few or no pin-feathers present to speak of; a feature wherein it differed from a number of other Picidæ taken on the same occasion. Having collected birds in this locality for the past two and a half years without ever having seen a specimen of this Woodpecker here before; and in view of the fact that our 'Check List' gives its habitat and range as "Pacific Coast Region of the United States, east into Arizona, south into Mexico," I desire to make this record here of its capture in the Territory of New Mexico, and at a point further east than, so far as the writer is aware, it has ever been noted before. At the present writing

I have no means of ascertaining how far north true *M. formicivorus* ranges, but take the bird now in my possession to be our *M. f. bairdi.* This evening I made a skin of this specimen, and in preparing it found no difficulty in passing the skin of the neck over the skull. I also noted that the epibranchials of the hyoid arches reached a point on the top of the cranium at an imaginary line joining the posterior peripheries of the outer borders of the orbits, in other words, no further forwards than the parietal region at the vault of the skull. When I do make skins of birds now-a-days, I have a habit of running a thread through a label giving full data in regard to the specimen, then pass the needle through the body, the eyes, and the back of the skull, all of which we have removed in making the skin, tie the whole in a bunch, and throw with others into a jar of fresh alcohol. It is a capital practice, saves excellent material, and was resorted to in the present instance.—R. W. SHUFELDT, *Fort Wingate, N. Mexico.*

Egg-laying extraordinary in Colaptes auratus.—On May 6th, 1883, I found in a large willow tree, a hole containing two eggs of this bird; I took one, leaving the other as a nest-egg, and continued to do this day after day until she had laid *seventy-one eggs.*

The bird rested two days, taking *seventy-three days to lay seventy-one eggs.* I think this is something very unusual; I have quite frequently heard of from fifteen to twenty-eight being taken from one bird, but this is a large number comparatively. I have the set complete, in my cabinet, and prize it very highly.

This was published in a small journal called the 'Young Oölogist', Vol. I, No. 2, 1884; but it being a rather obscure paper, and not reaching the general public, I concluded to send it to 'The Auk' for publication.—CHARLES L. PHILLIPS, *Taunton, Mass.*

The Range of Quiscalus major.—In the A. O. U. 'Check List' the habitat of the Boat-tailed Grackle is given as the "coast region of the South Atlantic and Gulf States, from North Carolina to Texas." The failure to assign a more northern limit of range is evidently an oversight, for the bird occurs as a regular inhabitant as far north at least as Cobb's Island, Virginia, about twenty-five miles above Cape Charles, and breeds in considerable numbers on certain of the marshy islands off the coast above the mouth of Chesapeake Bay. Mr. Robert Ridgway kindly informs me that during his visit to this region in July, 1881, he saw straggling flocks of this species almost daily, and killed several birds. They were moulting and in very poor plumage, and none were preserved. Mr. Ridgway further states that although he found no nests he has "no doubt these birds were, or had been, breeding either in the marshes on Cobb's Island or else on one of the neighboring islands." In July, 1884, I noticed the birds occasionally on Cobb's Island and on several of the islands adjacent thereto, and saw numbers of eggs that had been taken earlier in the season, chiefly on a small sparsely-wooded island, by the keeper of the U. S. Life Saving Station on Cobb's Island.—HUGH M. SMITH, *Washington, D. C.*

The Lapland Longspur about Washington, D. C.—My expectation of finding the *Calcarius lapponicus* in this vicinity was verified last winter. Dec. 11, while Dr. Fisher and I were riding along the road to Falls Church, and distant from Washington perhaps four miles, we saw a flock of fifteen or twenty Horned Larks by the road side. Scattered through the flock were half a dozen or more Longspurs, one of which was secured. Comparatively little collecting has ever been done about Washington in winter, and to this fact more than to its excessive rarity is due, I am persuaded, the absence of the species from the local lists. Although probably not a regular migrant, the species occurs here in small numbers, I am inclined to believe, during every hard winter. However, it is to be remarked that the records of this bird from so far south are very few. In Bull. N. O. C., Vol. VII, Jan. 1882, p. 54, Mr. Allen records the capture of a single individual in Chester, South Carolina, this being, so far as I know, the most southern record of its occurrence along the Atlantic coast.—H. W. Henshaw, *Washington, D. C.*

Description of Two New Races of Pyrrhuloxia sinuata Bonap.—

1. **Pyrrhuloxia sinuata beckhami.** Arizona Pyrrhuloxia.

Subsp. Char. Differing from true *P. sinuata** in decidedly browner and somewhat lighter tone of the gray, and greater extent of dark red on the tail; adult male with much less (often not any) blackish suffusion in the lighter carmine-red of the capistrum, and red of the crest much lighter; female with much less of a grayish tinge across chest and along sides; wing (♂) 3.60-3.90, tail 4.40-4.60, depth of bill .50-.52. *Hab.* Southern Arizona and New Mexico and contiguous portion of Northern Mexico. Type, No. 6370, U. S. Nat. Mus., ♂ ad., El Paso, Texas; Lieut. J. G. Parke, U. S. A. (Seventeen specimens examined.)

2. **Pyrrhuloxia sinuata peninsulæ.** St. Lucas Pyrrhuloxia.

Subsp. Char. Similar to *P. S. beckhami* in color, but decidedly smaller, with larger bill; wing (♂) 3.30-3.60, tail 3.80-4.15, depth of bill .52-.55. *Hab.* Lower California. Type, No. 87547, U. S. Nat. Mus., San José, Lower California, Apr. 13, 1882; L. Belding. (Eleven specimens examined.)

The first of the above-described new races is named in honor of Mr. C. W. Beckham, who furnished the material enabling me to make a satisfactory comparison of specimens.—Robert Ridgway, *Smithsonian Institution.*

Helinaia swainsonii near Chester C. H., S. C.—About a mile distant from the eastern portion of the town of Chester a male Swainson's Warbler was shot by me, Aug. 30, 1887, on the bank of a small branch

* About 30 specimens examined.

in a hardwood thicket at the extremity of a large body of woods. This spot, which has scarcely an area of two acres, borders on the open country and on a constantly travelled public highway. The ground is largely free from lesser vegetation, having been swept bare during high water by the overflow from the stream. There is not anything in the immediate surroundings, or in the general vicinage, to suggest the 'pine-land gall' which figures so prominently in the descriptions of the haunts of this species in the Low-Country. The inland character of the place of capture, situate as it is on the water-shed between the Broad and Catawba Rivers, in the heart of the Piedmont Region, one hundred and fifty miles from the coast, renders this find one of special interest. While it establishes nothing definitely beyond the mere fact of the occurrence of a single bird—perhaps accidental—during the time of migration, it awakens the mind to the possibility of an Up-Country habitat, yet awaiting discovery, where the true centre of abundance will finally be located. —LEVERETT M. LOOMIS, *Chester, S. C.*

Another Bachman's Warbler in Florida.—Mr. J. W. Atkins, of Key West, Florida, writes me that on August 30 of this year, he collected a specimen of Bachman's Warbler (*Helminthophila bachmani*) in the outskirts of the town of Key West. He found the bird, a female, he writes, "feeding in the black mangrove trees that skirt the edge of a pond of an acre or two in extent, and was the only one I could find. It measures 4⅝ inches in length; wing, 2¼; tail, 2. Feet and legs brownish, soles of feet yellowish. Bill blackish, light below at base. Forehead yellow, and lacks the band of black given in Coues's description of the species. Throat yellow, then a black area occupying part of the throat and breast, succeeded behind by yellow, which in turn becomes whitish on the belly and vent. Sides of neck faintly yellowish. Top of head and hind neck ashy. Rest of upper parts olive, agreeing with Coues's description. Tail-spots very small and on the inner edges of the feathers. I think it is an *adult* female."—W. E. D. SCOTT, *Tarpon Springs, Fla.*

Additional Captures of Helminthophila leucobronchialis.—The specimens below recorded were taken at Englewood, N. J., in a densely thicketed, low, wet woods.

1. (Now in Coll. Dr. A. K. Fisher, No. 2646, ♀, May 15, 1886.) Rump and interscapulars as in *H. pinus;* wing-bars intermediate between *H. chrysoptera* and *pinus.* A yellow pectoral band and a slight suffusion of same color on the underparts.

2. (Coll. F. M. C., No. 903, ♀ ad., June 26, 1887.) Immediately after the capture of this specimen I was attracted by the voices of young birds, and a search revealed, almost directly overhead, four young being fed by a typical male *pinus.* For between four and five hours this family was closely watched, and the non-appearance of a female during that period renders it possible that the missing parent was the captured bird. Three of the young were taken, all typical of *pinus*, the fourth escaped me.

Taking into consideration the fact that the female is in worn *breeding* plumage, the abdomen being denuded of feathers, it may be said to agree with the type of *leucobronchialis*. Why not consider these typical birds as the *ultimate* result of a union between *pinus* and *chrysoptera*, achieved by series of unions between the original hybrids with themselves or either of the parent species, in which both black and yellow are finally eliminated?

If this be true the intermediate specimens should outnumber the typical ones, and we have recorded, therefore, twenty-one birds approaching *pinus* and *chrysoptera* more or less closely and but eight agreeing with *leucobronchialis* as originally described.

3. (Coll. F. M. C., No. 932, ♂ im., July 31, 1887.) Dorsal surface and wing-bars as in *pinus*, with an extremely faint grayish cervical collar. Breast yellow, a flush of the same appearing on the white of the throat and abdomen. Taken within less than one hundred feet of the place where No. 903 was secured. The migration of *pinus* had not yet commenced, and this bird, which was undoubtedly born in the vicinity, would answer admirably as the missing fourth bird of the brood before mentioned.—FRANK M. CHAPMAN, *American Museum Natural History, New York City.*

Helminthophila leucobronchialis in New Jersey.—May 15, 1887, a fine male specimen of this bird was shot near this place. It differs from the type in having a spot of lemon yellow on the breast and being washed lightly with the same color on abdomen and back.—E. CARLETON THURBER, *Morristown, N. J.*

The Canadian Warbler breeding in Pike County, Pa. — On June 9, 1887, in the mountains of Pike County, Pa., I was fortunate enough to find a nest of the Canadian Warbler (*Sylvania canadensis*), containing four young birds and one unhatched egg. The nest was placed among the roots of an old stump and was well concealed from observation by weeds and grasses. It was constructed of small twigs, leaves, and grasses. The egg which I secured measured .71 × .53 of an inch and corresponded with the description given in Baird, Brewer, and Ridgway's 'History of North American Birds,' the ground color being white with dots and blotches of blended brown and purple, varying in shades and tints and forming almost a wreath around the larger end. Both parent birds were seen and fully identified.—ROBERT B. LAWRENCE, *New York City.*

On the correct Subspecific Title of Baird's Wren (No. 719 *b*, A. O. U. Check-List).—In their 'Biologia Centrali Americana,' Aves (1879), p. 96, Messrs. Salvin and Godman very properly change the current name for this form of Bewick's Wren (*Thryothorus bewickii leucogaster* Baird), their reasons for so doing being thus explained:

"In differentiating these races [of *T. bewickii*], Prof. Baird thought that he recognized in the Mexican bird the *Troglodytes leucogastra* of Gould, and hence properly called it *Thryothorus bewickii*, var. *leucogaster*. But Mr. Gould's name has since been found to apply to a very different

species, which now stands as *Uropsila leucogastra*. This being the case, it is obviously undesirable to retain the name *leucogaster* for the present bird as well as for the *Uropsila*; we therefore suggest that the form should stand as *Thryothorus bairdi*."

It seems, however, that the Mexican form of Bewick's Wren had previously been accurately described by Dr. Hartlaub as *Thryothorus murinus*, in the 'Revue et Magazin de Zoologie,' Vol. IV, 1852, p. 4, a translation of the description being as follows:

"Above pale brownish cinereous, the pileum more brownish; a long, narrow, and sharply defined superciliary stripe of white; parotic region streaked with white; feathers of lower back and rump with partially hidden ante-apical spots of white encircled by black; primaries (except the first) and secondaries, for their basal half slightly, and tertials more distinctly, barred; two middle tail-feathers concolor with the back, barred with blackish; the two next blackish, with whitish tips, the rest with outer webs more and more spotted with whitish, the outer with tip entirely whitish; under tail-coverts white barred with black; body beneath pale ashy, more whitish medially, the chin and throat purer whitish; breast washed with the color of the back; feet blackish, bill brownish; tail graduated; second to fifth quills subequal. Length,* 5.40; bill from forehead, .65; from rictus, .77; wing, 2.30; tail, 2.40; tarsus, .85. *Hab.* Mexico: Rio Frio. Museums of Bremen and Hamburg."

The only Mexican species which have the peculiar pattern of the tail-feathers described above are *T. bewicki* (subspecies "*bairdi*" Salv. & Godm. and *spilurus* Vig.) and *T. albinucha* (Cabot). The latter is of very different proportions, however, and is, moreover, confined to Yucatan and the Peten district of Guatemala. Therefore, since the description cited applies very exactly to the bird first named *Thryothorus bewicki*, var. *leucogaster* by Prof. Baird, and afterwards *T. bairdi* by Salvin and Godman, it appears necessary to discard both these appellations for that given earlier by Hartlaub, the correct name of Baird's Wren thus being *Thryothorus bewickii murinus* (Hartl.).—ROBERT RIDGWAY, *Smithsonian Institution.*

Central New York Notes.—HENSLOW'S SPARROW (*Ammodramus henslowi*). An adult male of this bird was taken by me near Syracuse, on June 30 of this year. Attention was drawn to the bird through its peculiar song, delivered from a tall weed in a field.

ORANGE-CROWNED WARBLER (*Helminthophila celata*). Oct. 2, 1886, I shot a young female near Syracuse, as it was following a small company of Golden-crowned Kinglets.

COMMON TERN (*Sterna hirundo*). Secured an adult female August 12, 1887, on Onondaga Lake.

SANDERLING (*Calidris arenaria*). I have a female of this bird, taken by a friend, Aug. 12, 1887, on Onondaga Lake.—MORRIS M. GREEN, *Syracuse, N. Y.*

* The measurements are reduced from French inches and decimals to English inches and decimals.

On the Westerly Trend of Certain Fall Migrants in Eastern Maine.—In investigating the influence of the topography of the land upon the flights of migratory birds, an interesting point is to ascertain to what extent the more prominent physical features of a region determine the direction of these flights, and especially is this important when great natural barriers deviate in their line of extent from the general north and south trend of the paths of migration. During a limited collecting experience of two years in the vicinity of the St. Croix River, a few facts seemingly bearing on this subject have come under my notice. I frequently came in contact with some of those species that perform their migratory journeys during the day, and one circumstance that struck my attention was, that in their fall migrations they all appeared to be flying directly *west*. At first I thought it to be merely a fortuitous circumstance, but repeated observation convinced me that there must be something more in it. I have noted it most frequently in the Swallows and Swifts, and very often in the Nighthawks, and my friend, Mr. Howard H. McAdam, informs me that he has observed this westerly movement in some Hawks when migrating in flocks.

In the case of the water birds, the surrounding country is so cut up by lakes and rivers, that their evidence, unless very accurately taken, is unreliable. Mr. William Brewster, in his account of his observations on the small, night-migrating birds at Point Lepreaux light-house ('Bird Migration,' Memoirs of Nuttall Club, No. 1), states that on leaving the light they always proceeded due *west*.

The question involved is this: Whether the birds inhabiting Maine, New Brunswick, and the country further northward, proceed directly south in their autumn journey until they reach the coast line, and then massing upon the coast, take their course westward until they can again continue directly south; or whether they pass across this territory in a westerly or southwesterly direction *from the first*, holding such a course until they reach the first great migration route tending directly south. My own observations being made only from thirty to fifty miles from the sea, would have little weight, even if more thorough, but I note my experience in order to call the attention of other field workers to a point that would be of some interest to determine, and with the hope that someone else may have had a similar experience.—Louis M. Todd, *Calais, Maine.*

A Bird Scare.—At half-past three o'clock on the morning of the 26th August, I was awakened by a noise which I had some difficulty, in my drowsy condition, in making out. I first thought it was from heavy drops of rain on the zinc floor of a balcony outside of my bedroom—such drops as precede a thunderstorm—and I lay back to sleep again. The noise continued, and I then knew it was caused by some objects flying against the windows. There is an electric lamp on a level with the middle of the window and only thirty feet away, and I thought it might be some unusually large moths striking against the glass. The noise was so irritating that sleep was out of the question, and I got up and went to the

window. The upper sash was down about 18 inches, and when I opened the inside Venetians a bird flew in. I saw some others flying against the glass, and throwing up the lower sash of the window I stepped on the balcony and easily caught two birds—all that were there then. At another window at the head of my bed I heard at least one bird, but I could not easily reach it, and it soon went away or dropped to the ground.

I placed the two I had caught under a glass shade, where they continued their fruitless efforts against the glass until I covered it up with a dark colored cloth. The bird in the room kept up an incessant fluttering against the walls and ceiling and eluded me completely. At daylight I noticed the ceiling streaked on the window side with blood—some two or three hundred marks altogether, from two inches long and three-eighths of an inch wide down to almost imperceptible dots. With the aid of a friend I secured the poor little frightened thing and put it also under a glass shade, first compelling it to swallow some water. It was a Tennessee Warbler, and the feathers and skin were completely torn off its head and showed a large and nasty wound already dry and healing. When taking it out in the afternoon to try and feed it, for it would eat nothing I put under the shade for it, it got out of my hand and again flew about the top of the room. At four in the afternoon I let the two under the shade out, and one found its way to the open window and flew a couple of hundred yards, when it got beyond my sight. The other joined the Warbler, but neither would fly low enough to get out at the top of the windows. Neither flew so as to hurt itself. At last the smaller bird got out, but the Warbler did not follow it. I left the windows wide open and when I came back, just before dark, it was gone. They were all this year's birds, the two caught on the window being Flycatchers—one quite young with the down still showing between the feathers, but flying well.

It turned out that during the night a general scare of birds had taken place, and I was asked all sorts of questions on the subject. A number of birds were brought to me to be identified. Some were rare visitors here—the Hermit Thrush, for instance. I was handed a pretty specimen of the Golden-crowned Thrush, but the crown was marred by a ghastly wound on which the blood was still fresh; in trying to escape from the hand its whole tail came out. It flew about the room, this was the 27th, until evening when it at last went out at the window.

On the evening of the 26th I took a walk to my friends, the taxidermists, and I learned from them that they had been offered large numbers of birds during the day by small boys who had caught them on the streets or on hawthorn bushes. One little fellow saw the birds during the day falling off the bushes exhausted. They flew in a circle and were quite dazed. One man said he counted fifty dead birds lying against the wall of a building as he walked past. During the night the 'Free Press premises were invaded by them until the windows had to be shut. Through this paper I asked for information as to where the scare originated, but so far no one has replied.

My own opinion is that the birds were overtaken while roosting by a

forest fire fanned by a southern breeze; that in their stupor, their instincts teaching them at the time of fear to fly south if anywhere, they flew into the smoke and got suffocated and frightened. No doubt thousands lost their lives and fell into the flames below. The survivors then flew away from the fire, and coming over this city were attracted by the electric lights and flew madly against the walls of buildings. At the Queen's Hotel, where the windows also had to be shut, there is a light as well as at the 'Free Press.' Two years ago a similar stampede was reported in one of the Southern States, but of Ducks alone. They flew in hundreds against the electric masts, and then against buildings. Our lights are on poles only 25 to 30 feet high.

The birds were all small and most of them of this year. Among those picked up or caught were the Redstart, the Black-and-white Creeper, the Tennessee Warbler, the House Wren, Flycatchers, the Hermit Thrush, the Golden-crowned Thrush, and the Chestnut-sided Warbler. The last is a rare visitor here. Small Sparrows, I am told, had been found, but I am not sure of this.

Mr. W. Hurd, our taxidermist, saw next day a Thrush flying along Main Street diagonally and only about two feet above the ground. The birds were all weak, but many, like those which struck my windows, evidently recovered, at least their senses. All were stupified, and many had wounds evidently caused by barbed wire.

In skinning the birds for preservation Mr. Hurd failed to notice anything which could have caused death; the various organs appeared sound and healthy, though the birds were rather small for him to be very certain regarding all of them.

I should have mentioned that the forests were on fire some eight miles south of the city.—ALEXANDER MCARTHUR, *Winnipeg, Manitoba.*

CORRESPONDENCE.

[*Correspondents are requested to write briefly and to the point. No attention will be paid to anonymous communications.*]

The Dermo-Tensor Patagii Muscle.

TO THE EDITORS OF THE AUK:—

Dear Sirs:—In this letter the writer proposes to reply to a criticism of Leonhard Stejneger, which appeared in 'Science' August 5, of an account of mine of a muscle which is present in certain birds, and which I designated by the name entitling this communication.

To those who are aware of the conditions under which I prosecute my anatomical work no word need be said; my labors in the myology of

birds were chiefly inaugurated and have been pursued during a time while their author found himself removed by several thousand miles from the libraries wherein may be consulted the works of the older anatomists. Under these circumstances my guides have been the general works of Owen, Huxley, Garrod, Mivart, Parker (T. J.), Forbes, and others of similar standing; several of these writers have given very exhaustive accounts of the myology of birds, but none of them, so far as I have been able to discover, have described the muscle in question.

This being the case I was intentionally guarded in my letter to 'Science' (No. 229), and said the dermo-tensor patagii "was a muscle for which at this moment I recall no published description" (p. 624), and by no means proclaimed it a "new discovery," although, so far as I am concerned, it has certainly proved to be an independent observation, but I fail to see that it is any the worse for that circumstance. This answers the first objection to my account made by Dr. Stejneger. Secondly, he charges me with "supposing that it is peculiar to the true passerine birds," when I, in my letter, distinctly said that "I had investigated the matter in but a limited number of birds" and would "look with interest for such future researches that might be made in that direction by others" (p. 624).

Any structural difference in such a group of vertebrates as birds is always to be welcomed, and as the muscle is evidently present in some and absent in others, I still maintain "that it is of taxonomical value," perhaps of greater value than did the authorities whom Dr. Stejneger pleases to quote to me,—dissectors, as a rule, who did not especially look into the structure of birds with the view of determining their affinities as Garrod did, and consequently would naturally not realize the importance to avian classification of such a muscle, were it even a new discovery to them.

Throughout the entire second paragraph of Dr. Stejneger's letter, I am, as it were, directly charged with doing Professor Garrod a "great injustice," and "grossly misrepresenting" him, as if that were the sole aim of my original description; whereas those who may be familiar with my writings in anatomy, know full well that in the many, many instances wherein I have been called upon to allude to his work or name, it has always been with the greatest amount of regard, a regard which I ever sincerely feel, and which is ever increasing as I more fully appreciate the power and force of the work he was enabled to leave us in his only too short career.

The dermo-tensor patagii was entirely absent *on both sides* in the specimen of *Tyrannus tyrannus* which I dissected, and I even went so far as to bring the dissection under a powerful microscope (one inch objective); there was no muscular tissue present, and, as I say, further than that I have not investigated the matter, nor, just now, do I intend to do so, as other anatomical work is engaging my attention.

In closing, perhaps I may be permitted to point out a few of the errors which Dr. Stejneger has unfortunately allowed to creep into his letter of criticism, and more especially into the figures which he published in

'Science' (No. 235) to show me how it ought to be done. These figures (Figs. 1 and 2, p.71) Dr. Stejneger informs us are "both of one-third natural size"; if this be so their author is laboring under the impression that *Colaptes auratus* has a head nearly *five inches* long, and everything else in proportion, to say nothing of the dimensions *Amazona* would attain under the statement in question! And, may I ask, how long since do we see upon "*dorsal view*" of a dissected *Colaptes*, the tips of the shoulder in close anatomical connection with the *side of the middle of the neck?* (See his Fig. 1.) Turning to his "dorsal view" of a dissection of the patagial muscles of a Parrot (*loc. cit.*, Fig. 2), this latter error is again repeated, but a far more glaring one here confronts us, for, among other faults, Dr. Stejneger has plainly drawn and lettered his biceps muscle, and would have us believe that it is inserted into the *extensor metacarpi radialis longus*, between the tensor patagii brevis and the humerus. It seems to me on an occasion of this kind, and where the opportunity presents itself to have two new figures added to anatomical science, it is fortunate for us when they prove to be useful ones; such is by no means the case in the present instance, and the true aims and accomplishments of criticism have herein failed in Dr. Stejneger's hands. Upon carefully reconsidering my last letter to 'Science' upon this subject I am at loss to find anything requiring any alteration, nor any adequate reason for changing the name I have given the dermo-tensor patagii muscle; indeed, in the latter instance, I am in full sympathy with Professor Eliott Coues, who has recently, and in the most forcible manner ('N. Y. Med. Record'), shown that the terminology of muscles requires a through reviewing, and the day is with us when we ought, for the sheer sake of clearness and convenience, to lay aside some of the abominable names the old anatomists bestowed upon some of them, and in some instances where the name was five times as big as the muscle.

From this standpoint I think Dr. Stejneger can consider the "pars propatagialis musculi cucullaris" of Fürbringer and Gadow as the dermotensor patagii of the present writer.

R. W. SHUFELDT.

Fort Wingate, New Mexico,
August 14, 1887.

POSTSCRIPT:—A description of the above muscle was published by the writer in 'Science,' some little time ago (No. 234, July 29, '87), and it called forth, it seemed to me, rather an acrimonious protest from Dr. Leonhard Stejneger in the same journal. That writer so misrepresented the entire matter, that I felt his criticism really required some notice from me, and the above reply was sent to 'Science,' but much to my surprise, the editor of that paper objected to my defending myself in its columns against a criticism which he saw fit to publish. Will 'The Auk' kindly do this matter justice for me, and insert the above rejoinder?

By the first of next month (Oct. 1, 87) I trust to have out a paper covering a description of all the muscles thus far used in the classification of birds, and in it will be given a full account of the present one. Even

until now I have had no time to further investigate this interesting structure, but will briefly remark here that I found it present, *i. e.* the *dermotensor patigii* muscle, in all the Acromyodian Passeres that I have thus far examined, and it was *entirely absent* in an alcoholic specimen of *Tyrannus tyrannus*, kindly supplied me by Mr. H. K. Coale, President of the Ridgway Ornithological Club of Chicago.

I introduce two figures here showing the absence and presence of this muscle on the occasion I examined it.

It is quite possible that this muscle may exist in other birds. I have nowhere stated that it does not, so far as I can remember. But I will say

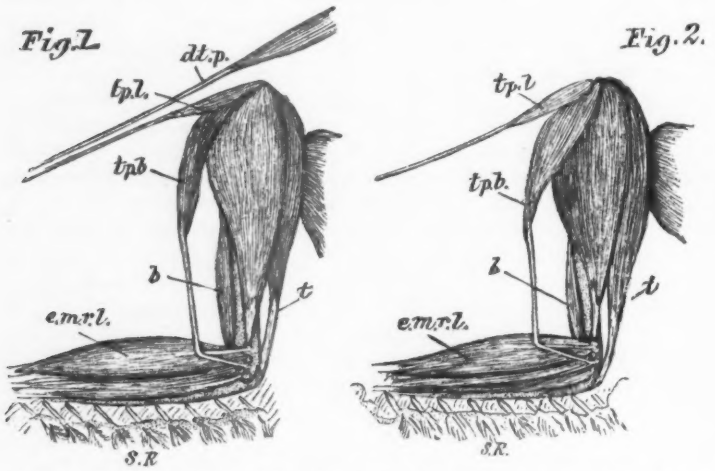

FIG. 1. Outer aspect, right arm of *Xanthocephalus xanthocephalus*, showing a dissection of the muscles of the region in question.

FIG. 2. The same of *Tyrannus tyrannus;* slightly enlarged. Both figures drawn by the author from his own dissections. *dt. p.* dermo-tensor patagii; *tp. l.*, tensor patagii longus; *tp. b.*, tensor patagii brevis; *b*, biceps; *t*, triceps; *e. m. r. l.*, extensor metacarpi radialis longus; *S. R.*, secondary remiges.

that if it is constant for the Acromyodian Passeres, and absent in the Mesomyodian Passeres, the fact will constitute a taxonomic character of value. If it is subsequently found to exist in both, a complete examination of it in our American birds will be a good thing; I do only insist that I found at least one Kingbird wherein it was entirely absent, and that it was present in a long list of Oscines.

With these few brief remarks upon the subject I close the case for the present, with the hope that other dissectors with good eyes will look into the matter. But if you illustrate your work, let us, gentlemen, have intelligent drawings.

Very faithfully yours,

R. W. SHUFELDT.

Fort Wingate, N. Mexico,
13th Sept., 1887.

A Protest.

To the Editors of the Auk:

Sirs:—Having waited until the last moment for the return of Mr. Lucas, who has been absent from the United States since the first of July and thus unable to speak for himself, I wish to enter a respectful but most earnest protest against Dr. Shufeldt's shameful slur on him, printed on page 265 of the last number of this journal. Whatever may be the custom in that part of the world from which Dr. Shufeldt wrote his letter for the July 'Auk,' it is not customary in most places for a person when fairly beaten in an argument to attack the honesty of his opponent with a cry of fraud. The reckless manner in which Dr. Shufeldt flings an untruth at his critic, and then declares that he will not re-open his "case" under any circumstances, might be amusing, perhaps, if both parties to the "case" were children; but in the present instance it is simply contemptible. Mr. Lucas had a right to expect better treatment, especially after the courtesy which he has invariably accorded Dr. Shufeldt, even when, as in the present case, the latter has been obviously and obstinately in error. As Mr. Lucas has already accomplished (Science, July 1, 1887, p. 12) what Dr. Shufeldt preferred merely to talk about, namely, the publication of a true copy of Dr. Shufeldt's original figure side by side with his (Mr. Lucas's (own tracing of the same) which Dr. Shufeldt claims was purposely mutilated to support a theory), no shadow of this unjust reflection remains where it was so ungenerously cast; and if it envelops its originator it only verifies the old proverb about curses and chickens. It is naturally unpleasant to acknowledge a mistake, but it is not likely to become easier the longer it is delayed. Even silence is preferable, however, to the attempt to defend an untenable position; and when such defence becomes incompatible with strict honesty, common sense allows a man but one course.

I feel that no apology is needed for calling attention to this matter now, for the principle violated lies at the very foundation of all science, and its general disregard would make utterly impossible that interchange of ideas which now constitutes the brightest hope of American ornithologists.

Very respectfully,

Walter B. Barrows.

Washington, D. C., August 31, 1887.

The Metric System.

To the Editors of The Auk:—

Sirs: In 'The Auk' of April, 1884, Dr. Merriam presented 'A Plea for the Metric System in Ornithology,' which was editorially endorsed, and a request made asking "all contributors to the pages of 'The Auk' to give their measurements in the metric system."

Since then a few have done so, most of the writers have not, and each issue adds to the burden of inches and hundredths.

Why has not the change been made?

Will you through these pages kindly shed some light on the subject and thus bring it to the attention of the A. O. U.?

It seems desirable to have some fixed arrangement for the convenience of all.

The choice in this locality appears to be for the metric system.

WILLIAM FLINT.

Oakland, Cal.

NOTES AND NEWS.

SPENCER FULLERTON BAIRD died suddenly at Wood's Holl, Mass., August 19, in his sixty-fifth year, after suffering for many months from seriously impared health. In his death American ornithology has lost its time honored leader, and zoölogical science one of its most powerful and unselfish promoters. Although occupied during the later years of his life with engrossing executive cares attending two of the most important positions of scientific responsibility to which a naturalist could be called—those of Secretary of the Smithsonian Institution and head of the United States Fish Commission—his impress upon American zoölogy is perhaps unequalled by that of any other naturalist, living or deceased. His published works on the mammals, birds, reptiles, and fishes of North America were for a long period of years the standard authorities of the subject, and will always hold the place of classics. His influence upon the progress of ornithology in America is beyond comparison, his work of thirty years ago forming the basis of nearly all subsequent advance. But his influence was by no means restricted to his published writings, he having been the instigator and organizer of ornithological explorations extending throughout the North American continent. To his influence with the government authorities is due the excellent field work done in connection with nearly all the Government Surveys and the Signal Service Bureau, from the first inception of the various Pacific Railroad Surveys to the present time. The immense resources thus gathered into the National Museum have rendered possible the rapid progress in our knowledge of North American birds which has especially marked the last two decades.

In Professor Baird every rising naturalist has found a friend, ever ready to render all possible assistance and encouragement. Many owe to him opportunities for prosecuting distant explorations, or the material for monographic work. His one object, to which he was most disinterestedly devoted, was the advancement of science, and every effort to that end was sure of his generous encouragement. To the American Orni-

thologists' Union he was ever a friend, giving it from the first his hearty support, and rendering, as one of its Councilors, efficient aid in directing its affairs.

At the meeting of the A. O. U., soon to be held in Boston, a memorial address will be delivered by one eminently qualified to speak of his scientific work and worth. This address will doubtless be published in the next (January) number of 'The Auk,' rendering further notice of our great Nestor unnecessary in the present connection.

THE Fifth Congress of the American Ornithologists' Union will convene in Boston, Mass., Oct. 11, 1887. The meetings will be held in the Lecture Room of the Boston Society of Natural History. The presentation of ornithological papers will form a prominent feature of the meetings, although other important matters will come up for action. A large attendance of both Active and Associate Members is anticipated.

OWING to continued ill health and the pressure of other engagements, the present editor of 'The Auk' finds himself compelled to sever his editorial connection with this journal with the close of the present volume.

THE Index to Vol. IV of 'The Auk,' owing to unexpected and unavoidable delay in its preparation, is necessarily omitted from the present number. If not issued separately within the next few weeks, it will accompany the number for January, 1888.

FOR the portrait of the late Professor Baird, forming the frontispiece to the present number, 'The Auk' is indebted to the generosity of Prof. G. Brown Goode, through the solicitation of Dr. Coues.

IT HAS been proposed to erect a monument in New York City in memory of John J. Audubon, in connection with the removal of his remains from an old family vault in Trinity Cemetery, rendered necessary by proposed street alterations. A plot of ground has been offered for the purpose at the head of Audubon Avenue. The matter has been recently mentioned in 'Science' and other journals, and a resolution endorsing the project was adopted by the American Association for the Advancement of Science at its meeting recently held in New York. The subject is one in which it becomes ornithologists to take a lively interest.

MR. MONTAGUE CHAMBERLAIN, of St. John, N. B., has sent to the printer 'An Annotated Catalogue of the Birds of Canada.' The 'Catalogue' will include the whole area of Canada, from the Atlantic to the Pacific, and north to the Arctic Coast. Its publication may be looked for early in October.

AS IS well known, Dr. Edgar A. Mearns, U. S. A., stationed at Fort Verde, Arizona, is making extensive natural history explorations in Ari-

zona, the ornithology of the region receiving special attention. During the past summer he has been able to make several extended and very successful expeditions into the more unexplored parts of the Territory, including the Matatzal and Mongollon Mountains. Large shipments of specimens received from him at the American Museum of Natural History attest his industry and success. He intends later to make them the basis of elaborate papers, giving the results of his several years' natural history work in the Territory.

THE Report of the Ornithologist to the Department of Agriculture, Dr. C. Hart Merriam, for the year 1886, which has recently come to hand, not only reviews the work of the year, but contains what may be considered as a preliminary report of extended investigations upon the House Sparrow (*Passer domesticus*). The results stated are of startling importance and suggestiveness. The report gives a brief history of its introduction, rate of increase, method of diffusion, and its destructive proclivities. An accompanying map shows its distribution in the United States at the close of the year 1886, when the area occupied by it is given as 885,000 square miles in the United States and about 148,000 square miles in Canada, or a total of 1,033,000 square miles over which it has spread in North America, mainly during the present decade It now has overspread not only all the region east of the Mississippi River, except a narrow border along the Gulf Coast, but nearly all of Missouri, a large part of Kansas, Iowa, and considerable areas in Nebraska, Minnesota, Utah, and California. It proves to be not only an enemy of several of our most valued song birds, but exceedingly injurious to the gardener and fruit grower, especially grape-culturists, and also extends its ravages to grain fields. It proves to be not only a complete failure as a destroyer of insects, but is charged with actually causing an increase of one of our most noxious caterpillar pests. Many abstracts of testimony on these points, from many and widely distant sources, are given in the Report, which submits a series of recommendations to legislators, and to the people in reference to the Sparrow question. To quote from the Report: "The English Sparrow is a curse of such virulence that it ought to be systematically attacked and destroyed before it becomes necessary to deplete the public treasury for the purpose, as has been done in other countries. By concerted action, and by taking advantage of its gregarious habits, much good may be accomplished with little or no expenditure of money." Methods are then suggested for its destruction.

The ravages of the Rice-bird (*Dolichonyx oryzivorus*) in the rice fields of the South are then detailed, these involving, it is estimated, a loss of millions of dollars annually to the rice-growers.

INDEX TO VOLUME IV.

ACANTHIS cabaret, 30, 31, 34, 144.
canescens, 32.
exilipes, 30, 32, 33, 34, 62, 63.
holbœllii, 33, 34, 35, 62, 63.
hornemanni, 30, 63.
hornemanni exilipes, 163, 164.
linaria, 30, 32, 33, 34, 62, 63, 163, 164.
linaria holbœllii, 12, 33, 163, 164.
linaria pallescens, 33.
linaria rostrata, 163, 164.
pallescens, 32, 33.
rostrata, 30, 63, 164.
rufescens, 31, 63, 144, 145.
sibirica, 33.
Accentor modularis, 268.
Accipiter atricapillus striatulus, 183, 188.
cooperi, 40, 103, 188.
fringilloides, 41.
fuscus, 41, 42.
gundlachi, 40.
mexicanus, 40.
pileatus, 40.
velox, 42, 103, 188, 264.
Actitis macularia, 12, 14, 16, 103, 129, 180, 181, 186, 303, 318, 319, 340.
Actiturus bartramius, 319.
longicaudatus, 319.
longicaudus, 319.
Actodromas bonapartii, 315.
maculata, 314.
minutilla, 314.
wilsonii, 314.
Ægialeus melodus, 320.
semipalmatus, 229.
tenuirostris, 230.
Ægialitis meloda, 230.
melodus, 230.
montana, 91, 186.
nivosa, 8, 60, 229, 230, 344.
semipalmata, 12, 91, 219, 229.
Ægialitis tenuirostris, 229.
vocifera, 124, 128, 129, 186, 228.
wilsonia, 137, 228, 229, 274, 276.
Ægiothus borealis, 33.
linaria, 33.
linaria holboelli, 164.
Æsalon columbarius, 43.
Æstrelata gularis, 335.
scalaris, 335.
Agelaius forbesi, 150.
gubernator, 22.
phœniceus, 124, 162, 241, 256, 290, 302.
phœniceus bryanti, 336.
phœniceus sonoriensis, 336.
Ajaja ajaja, 137, 143, 215, 222, 274, 280, 281, 304, 322.
rosea, 322.
Albatross, 1, 2, 5, 6.
Sooty, 3.
Wandering, 1, 3.
Alca torda, 158.
Allen, J. A., a further note on *Colinus ridgwayi*, 74; the Redpolls of Massachusetts, 164; unusual nesting-site of the Song Sparrow, 260; additional specimens of Bachman's and Swainson's Warblers obtained by Mr. Chas. S. Galbraith in the spring of 1887, 263; the Pine Finch (*Spinus pinus*) breeding at Cornwall-on-Hudson, N. Y., 284. See also Scott, W. E. D.
American Ornithologists' Union, fourth meeting of the, 56.
Ammodramus australis, 155.
bairdii, 291.
beldingi, 251.
caudacutus, 232, 234, 235, 237, 238, 260.
caudacutus nelsoni, 232, 234, 235, 236, 237, 238.

Ammodramus caudacutus subvirgatus, 233, 235, 236, 237, 238.
henslowi, 350.
sandwichensis alaudinus, 122, 199, 291.
sandwichensis savanna, 16, 237, 259, 302.
savannarum passerinus, 248, 304.
savannarum perpallidus, 87, 199, 291.
Ampelis cedrorum, 16, 105, 128, 131, 244, 259, 294, 302.
Amphispiza belli, 93.
belli nevadensis, 203.
bilineata, 22, 202, 292.
Anas americana, 184.
boschas, 93, 94, 184.
carolinensis, 12, 184.
cyanoptera, 184.
discors, 184.
fulvigula, 274.
obscura, 184.
penelope, 339.
strepera, 184.
Ancylochilus subarquatus, 315.
Anhinga, 184.
Anhinga anhinga, 188.
Ani, Groove-billed, 190.
Anser albifrons gambeli, 12, 185.
hutchinsi, 69.
Anthony, A. W., winter plumage of *Leucosticte australis*, 257.
Anthus pensilvanicus 13, 297.
spraguei, 65, 265, 297.
Antrostomus carolinensis, 303.
vociferus, 191.
Aphelocoma californica hypoleucus, 335.
insularis, 329.
sieberii arizonæ, 20.
woodhousei, 20, 290.
Aquila chrysaëtos, 75, 91, 341.
Archibuteo ferrugineus, 91, 189.
lagopus, 12.
Ardea abba, 324.
alba, 324.
brunnescens, 327.
(Butorides) virescens, 327.
cærulea, 136, 138, 142, 180, 185, 214, 220, 281, 325.
candidissima, 136, 138, 142, 143, 185, 214, 215, 217, 220, 222, 247, 280, 281, 282, 324.
cubensis, 325.
cyanirostris, 328.
egretta, 78, 136, 138, 142, 143, 159, 214, 215, 217, 247, 324, 339.
Ardea herodias, 16, 136, 185, 214, 215, 219, 220, 281, 283, 323, 329.
leuce, 324.
leucogastra, 327.
leucogastra var. leucoprymna, 327.
ludoviciana, 327.
occidentalis, 159, 324.
pealei, 138, 144, 214, 215, 218.
rufa, 137, 138, 139, 143, 144, 214, 215, 216, 217, 218, 221, 280, 281, 325, 335.
rufescens, 325, 335.
ruficollis tricolor, 138, 142, 143, 215, 220.
tricolor. 327, 328.
tricolor ruficollis, 136, 139, 180, 181, 214, 216, 280, 281, 282, 327, 328.
virescens, 96, 129, 136, 180, 181, 215, 280, 303, 326.
wardi, 143, 272.
wurdemannii, 324.
wuerdemanni, 159, 272.
Arenaria calidris, 315.
interpres, 16, 87, 219, 231.
melanocephala, 12, 329.
Arremon nigrirostris, 150.
Asio accipitrinus, 12, 189, 264.
wilsonianus, 189.
Audubonia occidentalis, 324.
Auk, Razor-billed, 158.
Avocet, 185.
Aythya affinis, 184.
americana, 94, 184.
collaris, 24, 185.
marila nearctica, 141.
vallisneria, 184.
Bagg, E., see Ralph, W. L.
Bailey, H. B., the Brown Thrush laying in the nest of the Wood Thrush, 78.
Baird, S. F., occurrence of Cory's Shearwater (*Puffinus borealis*) and several species of Jaegers in large numbers in the vicinity of Gay Head, Mass., during the autumn of 1886, 71.
Baldpate, 184.
Barrows, W. B., the sense of smell in *Cathartes aura*, 172; a protest, 357.
Bartramia longicauda, 12, 186, 319.
Beckham, C. W., scarcity of adult birds in autumn, 79; additional notes on the birds of Pueblo County, Colorado, 120; additions

to the avi-fauna of Bayou Sara, La., 299.
Bellona cristata, 96.
Bird, Cardinal, 338.
Frigate, 136.
Man-o'-War, 139, 141, 214, 216, 219, 221, 222, 279, 281.
Rice, 59, 341.
Whale, 1.
Bittern, 185.
Least, 185, 338.
Blacicus flaviventris, 251.
martinicensis, 96.
Blackbird, Bicolored, 22.
Boat-tailed, 277.
Brewer's, 23, 76, 291.
Red-winged, 241, 290, 302.
Rusty, 15.
Yellow-headed, 22, 256, 266, 290.
Blake, E. W., Jr., summer birds of Santa Cruz Island, California, 328.
Blakiston, J. W., notice of his 'Water-Birds of Japan,' 250.
Bluebird, 133, 299, 301.
Eastern, 211.
Mountain, 299.
Western, 299.
Bobolink, 15, 59, 139, 331, 333, 339, 340.
Bob-white, 9, 129, 246.
Masked, 159.
Texan, 9, 24, 186.
Bonasa umbellus, 103, 129, 246, 338, 342.
umbellus togata, 15, 16.
Botaurus exilis, 87, 185, 338.
lentiginosus, 185.
Brachyramphus brevirostris, 65.
hypoleucus, 87, 93.
marmoratus, 65, 87.
perdix, 65.
Brambling, 163.
Brant, Black, 185.
Branta bernicla, 264.
canadensis, 185.
canadensis minima, 12.
nigricans, 87, 185.
Brewster, W., the Golden Eagle in eastern Massachusetts, 75; the Black Gyrfalcon (*Falco rusticolus obsoletus*) in eastern Maine, 75; three new forms of North American birds, 145; the Common Murre (*Uria troille*) and the Razor-billed Auk (*Alca torda*) on the New England coast, 158; further notes on the Masked Bob-white (*Colinus ridgwayi*), 159; capture of a third specimen of the Short-tailed Hawk (*Buteo brachyurus*) in Florida, 160; a third New England specimen of Swainson's Hawk (*Buteo swainsoni*), 160; capture of a Fish Crow (*Corvus ossifragus*) at Wareham, Massachusetts, 162; the Redpolls of Massachusetts, 163; an overlooked specimen of Bachman's Warbler, 165; discovery of the nest and eggs of the Western Warbler (*Dendroica occidentalis*), 166; Hummingbirds feeding their young on insects, 255; 'scarcity of adult birds in autumn,' 268.
Brooks, W. E., notice of his papers on the genus *Acanthis*, 63.
Browne, F. C., the New England Glossy Ibises of 1850, 97; the Clapper Rail again in Massachusetts, 344.
Bryant, W. E., *Piranga rubriceps* and *Tringa fuscicollis* in California, 78; notice of his 'Additions to the Ornithology of Guadeloupe Island,' 154.
Bubo virginianus, 67, 128, 129, 247.
virginianus subarcticus, 190.
Buffle-head, 185.
Bunting, Black-throated, 294.
Indigo, 131, 293, 302.
Lark, 205, 294.
Lazuli, 205.
Painted, 293.
Snow, 67.
Buteo abbreviatus, 188.
albicaudatus, 26, 188.
borealis, 39, 241, 247.
borealis calurus, 188.
brachyurus, 160.
harlani, 304.
latissimus, 40, 66, 96, 332.
lineatus, 188, 241.
pennsylvanicus, 40.
swainsoni, 91, 160, 189.
Butorides brunnescens, 327.
virescens, 326.
Buzzard, Mexican, 222.
Turkey, 51, 92, 173, 209, 210, 340.
CALAMOSPIZA melanocorys, 205, 294.
Calcarius lapponicus, 12, 347.
ornatus, 77, 199.

Campephilus imperialis, 161.
principalis, 68, 338.
Campylorhynchus bruneicapillus, 297.
Calidris arenaria, 219, 276, 278, 279, 315, 350.
Callipepla elegans bensoni, 156.
squamata, 186, 187.
squamata castanogastris, 25.
Canvas-back, 184.
Caprimulgus europæus, 81.
Caracara, Audubon's, 27, 189.
Cardinal, 131, 244, 293.
Arizona, 204.
Texan, 204, 293.
Cardinalis cardinalis, 131, 244, 293, 302, 338.
cardinalis superbus, 204.
Carduelis elegans, 339.
Carpodacus cassini, 88, 197.
frontalis, 124, 197, 335.
frontalis rhodocolpus, 330, 336.
mexicanus frontalis, 335.
mexicanus ruberrimus, 336.
purpureus, 15, 16, 103, 105, 212, 291.
purpureus californicus, 196, 199.
Catbird, 132, 244, 297, 300.
Catharista atrata, 25, 51, 188, 214, 303.
Cathartes atratus, 51, 52.
aura, 50, 51, 129, 172, 188, 209, 210, 214, 303, 340.
Catophtrophorus speculiferus, 316.
Catoptrophorus semipalmatus, 316.
Cedarbird, 302.
Ceophlœus pileatus, 68, 104, 128, 130, 248.
Cepphus columba, 86, 93, 328.
Cepphus perdix, 65.
Cerchneis carribœarum, 46.
isabellina, 44.
leucophrys, 45.
sparveria, 44.
sparverioides, 45.
sparverius, 44.
Cerorhinca monocerata, 93.
Certhia familiaris americana, 88, 106, 123, 244, 298.
Certhiola martinica, 95.
tricolor, 180, 181.
Ceryle alcyon, 12, 14, 16, 130, 138, 181, 190, 275, 302, 329.
cabanisi, 190.
stictipennis, 96.
Chadbourne, A. P., a list of the summer birds of the Presidential Range of the White Mountains, N. H., 100.
Chæmepelia passerina, 116.
Chætura, 80, 171.
pelagica, 15, 16, 130, 303.
pelasgica, 104.
vauxii, 92.
Chamæa fasciata, 268.
Chamæpelia bahamensis, 116, 155.
passerina, 116.
purpurea, 155.
trochila, 116.
Chamberlain, M., the Florida Gallinule in Nova Scotia, 253; the Baltimore Oriole (*Icterus galbula*), in Nova Scotia 256; the Song Sparrow in New Brunswick in winter, 260; the Sharp-tailed Sparrow (*Ammodramus caudacutus*) in a fresh-water marsh, 261; nesting of the Hudsonian Chickadee (*Parus hudsonicus*), 261; new species of winter birds in New Brunswick, 264.
Chapman, F. M., additional captures of *Helminthophila leucobronchialis*, 348.
Charadrius (Ægialitis) vociferus, 228.
dominicus, 78, 186, 227.
fulvus var. virginiacus, 227.
helveticus, 228.
marmoratus, 227.
melodus, 230.
mexicanus, 231.
pluvialis, 227.
pluvialis americanus, 227.
semipalmatus, 229.
squatarola, 219, 227, 274, 279.
virginiacus, 227.
virginianus, 227.
vociferus, 228.
wilsonius, 228.
Charitonetta albeola, 185.
Chat, Long-tailed, 296.
Yellow-breasted, 132, 296, 302.
Chelidon erythrogaster, 13, 15, 16, 294, 309, 330.
erythrogastra, 304.
namiyei, 250.
Chen hyperborea, 185, 264.
Chewink, 302.
Chickadee, 107, 298.
Chickadee, Black-capped, 15, 102.
Carolina, 133, 245, 298, 301.

Chickadee Hudsonian, 15, 107, 261.
Hudson's Bay, 102.
Chicken, Mother Carey's, 5.
Prairie, 67.
Chlorœnas inornata, 110.
Chondestes grammacus, 133, 241, 251.
grammacus strigatus, 199, 251, 291.
Chordeiles acutipennis texensis, 81.
texensis, 27, 92, 191.
virginianus, 15, 16, 68, 130, 303.
virginianus henryi, 86, 299.
Chuck-will's-widow, 303.
Cinclocerthia gutturalis, 95.
Cinclus mexicanus, 86.
Circus cyaneus, 38.
cyaneus var. hudsonius, 38.
hudsonicus, 38.
hudsonius, 12, 16, 38, 121, 188, 246.
Cistothorus palustris, 93, 298.
Clarke, H. L., the Canada Jay in southern Vermont in summer, 256.
Clarke, W. E., occurrence of *Agelaius phœniceus* (L.) on the west coast of England, 162.
Clivicola riparia, 15, 16, 294.
Coale, H. K., description of a new subspecies of Junco from New Mexico, 330; ornithological curiosities,—a Hawk with nine toes, and a Bobolink with spurs on its wings, 331.
Coccothraustes vespertina, 196, 256, 257.
Coccyzus americanus, 190, 263, 264, 303.
americanus occidentalis, 335.
erythrophthalmus, 190, 263.
maynardi, 335.
minor, 96, 180, 221.
sp. ?, 16.
Colaptes auratus, 16, 66, 68, 91, 191, 242, 264, 303, 346, 355.
cafer, 124, 191, 329.
Colinus cubanensis, 223, 224, 225.
graysoni, 74, 160.
ridgwayi, 69, 74, 159.
virginianus, 9, 129, 224, 246.
virginianus cubanensis, 336.
virginianus floridanus, 225, 283.
virginianus texanus, 9, 24, 186.
Columba caniceps, 118.
Columba caribbæa, 110.
carolinensis, 112.
(Chamæpelia) passerina, 116.
corensis, 96, 109.
cristata, 117.
cyanocephala, 120.
frontalis, 111.
(Geotrygon) martinica, 119.
(Geotrygon) montana, 119.
(Goura) passerina, 116.
imbricata, 109.
inornata, 110.
jamaicensis, 111.
leucocephala, 108, 180.
leucoptera, 115.
macroura, 112.
martinica, 119.
migratoria, 113.
montana, 118, 119.
monticolor, 109.
mystacea, 117.
passerina, 116, 155.
portoricensis, 109.
rufina, 110.
(Zenadura) carolinensis, 113.
zenaida, 113.
(Zenaida) martinicana, 114.
Columbigallina passerina, 96, 116, 183.
passerina pallescens, 336.
Colymbus auritus, 247.
Compsothlypis americana, 180, 301.
Contopus borealis, 18, 88, 192, 335.
pertinax, 19, 264.
richardsoni, 19, 193.
virens, 130, 192.
Conurus carolinensis, 68, 303.
Cooper, J. G., additions to the birds of Ventura County, Cal., 85.
Cooperastur gundlachi, 40.
Coot, 185, 303.
Cormorant, 280, 282.
Baird's, 329.
Brandt's, 329.
Double-crested, 184, 253.
Florida, 136, 141, 215, 219, 274, 281.
Corvus americanus, 15, 16, 21, 86, 92, 104, 130, 290.
americanus hesperus, 335.
carnivorus, 335.
caurinus, 86, 92.
corax carnivorus, 335.
corax principalis, 335.
corax sinuatus, 12, 15, 16, 21, 92, 290, 329.
cryptoleucus, 21, 290.
ossifragus, 138, 162, 214.

Cory, C. B., a new Vireo from Grand Cayman, West Indies, 6; the birds of the West Indies, including the Bahama Islands, the Greater and the Lesser Antilles, excepting the Islands of Tobago and Trinidad, 37, 108, 223, 311; notice of his paper on birds from several little-known islands of the West Indies, 66; description of a new species of *Rhamphocinclus* from St. Lucia, West Indies, 94; a list of the birds collected by Mr. W. B. Richardson, in the Island of Martinique, West Indies, 95; more news of *Ardea wuerdemanni*, 159; descriptions of six supposed new species of birds from the Islands of Old Providence and St. Andrews, Caribbean Sea, 177; a list of the birds taken by Mr. Robert Henderson, in the Islands of Old Providence and St. Andrews, Caribbean Sea, during the winter of 1886–87, 180; description of a new *Euethia* from Old Providence Island, 245.
Coturnix dactylisonans, 67.
Cowbird, 241, 248, 264, 290.
Dwarf, 22, 290.
Cox, P., Jr., rare birds of north-eastern New Brunswick, 205.
Crane, Sandhill, 141, 185.
Whooping, 185.
Creaker, 73.
Creeper, Black-and-white, 244, 353.
Brown, 106, 244, 298.
Crossbill, 13.
American, 105, 287.
American Red, 242.
Mexican, 197.
Red, 287.
Crotophaga ani, 96.
sulcirostris, 190.
Crow, 15.
American, 21, 104, 130, 290.
Carrion, 188, 303.
Clark's, 341.
Fish, 138, 162, 214.
Cuckoo, Black-billed, 190.
Mangrove, 221.
Yellow-billed, 190, 303.
Cupidonia cupido, 67.
Curlew, 247.
Long-billed, 186.
Pink, 222.
White, 140.
Cyanocephalus cyanocephalus, 21.
Cyanocitta cristata, 16, 103, 104, 128, 130, 213, 289, 303.
stelleri, 20.
stelleri annectens, 336.
stelleri frontalis, 86.
stelleri macrolopha, 124.
Cyclorhis flaviventris yucatanensis, 156.
Cymindis boliviensis, 48.
cuculoides, 48.
pucherani, 48.
uncinatus, 47, 48.
vitticaudus, 48.
wilsonii, 47.
Cypseli, 80.
Cypselus apus, 171.
Crytonyx montezumæ, 186.
Dafila acuta, 12, 184.
Daption capensis, 4, 5, 6.
Davison, J. L., *Ardea egretta* in Niagara County, N. Y., 159; birds laying their eggs in the nests of other birds, 263.
Demiegretta ludoviciana, 327.
pealii, 325.
rufa, 325.
ruficollis, 327.
Dendragapus canadensis, 12, 15, 16, 103.
obscurus, 88.
Dendrochelidon mystacea, 171.
Dendrocygna autumnalis, 185.
fulva, 88, 185.
Dendroica æstiva, 13, 16, 94, 264, 296, 297 301.
æstiva morcomi, 251.
auduboni, 125, 296.
blackburniæ, 103, 106, 128, 132, 183, 269, 301.
cærulea, 128, 132, 296, 306.
cærulescens, 102, 106, 128, 132, 251.
castanea, 103, 106, 269.
chrysoparia, 296.
coronata, 13, 15, 16, 103, 106, 180, 269, 296, 306.
discolor, 134, 135, 221.
dominica, 7, 165.
dominica albilora, 166, 301.
dugesi, 251.
flavida, 179, 181.
graciæ, 86.
maculosa, 15, 16, 269.
nigrescens, 86.
occidentalis, 86, 166.
palmarum, 180.
palmarum hypochrysea, 241.

Dendroica pensylvanica, 128, 132, 306.
rufigula, 95.
striata, 13, 102, 103, 106, 248.
tigrina, 221.
townsendi, 183, 296, 297.
vigorsii, 128, 132, 301.
virens, 15, 16, 102, 106, 128, 132, 165, 296.
Dickcissel, 205, 304.
Dimigretta rufa, 325.
Diomedea culminata, 3.
exulans, 1, 2, 3, 5, 6.
melanophrys, 3.
Dolichonyx oryzivorus, 15, 16, 59, 139, 331, 333, 339, 340, 341, 360.
Dove, Carolina, 303.
Ground, 183.
Mourning, 129, 187, 264, 329.
Dowitcher, 185.
Dryobates arizonæ, 335.
nuttallii, 156, 251.
pubescens, 16, 104, 130, 190, 242, 303.
pubescens gairdneri, 124, 156.
scalaris, 190, 335.
scalaris bairdi, 335.
stricklandi, 335.
villosus, 16, 104, 121, 128, 130, 304.
villosus auduboni, 242.
villosus harrisi, 121.
Duck, Black, 184.
Eider, 69, 341.
Florida, 274.
Little Scaup, 184.
Ring-necked, 24, 185.
Ruddy, 184.
Wood, 184.
Dunlin, 186.
Dutcher, W., *Megalestris skua*, 158.
Dwight, J., Jr., summer birds of the Bras d'Or region of Cape Breton Island, Nova Scotia, 13; a new race of the Sharp-tailed Sparrow (*Ammodramus caudacutus*), 232.
Eagle, Bald, 15, 189, 329, 339, 340, 341.
Golden, 75, 341.
Ectopistes migratorius, 113, 187, 339.
Egret, American, 78, 217, 247, 280, 281.
Great White, 214, 339.
Little White, 142, 143.
Muffled-jawed, 218.
Peale's, 214, 215.
Egret, Reddish, 137, 139, 143, 214, 215, 216, 217, 218, 221, 280, 281.
White, 67, 142.
Egretta cærulea, 326.
candidissima, 325.
luce, 324.
nivea, 326.
ruficollis, 327.
Elainea cinerescens, 180.
martinica, 7, 96, 181.
Elanoides forficatus, 46, 304.
Elanus leucurus, 188.
Empidochanes furcatus, 66.
Empidonax acadicus, 303.
brunneus, 66.
difficilis, 19, 92, 329.
flaviventris, 16, 103, 104, 269, 304.
hammondi, 19, 86, 193.
minimus, 193.
obscurus, 19, 85, 92, 183, 193.
pusillus, 19, 92, 193.
pusillus traillii, 9, 16, 193.
salvini, 66.
Engyptila collaris, 112.
jamaicensis, 111, 179.
neoxena, 179, 181.
wellsi, 111, 251.
Ereunetes himantopus, 312.
occidentalis, 186, 313.
petrificatus, 313.
pusillus, 12, 16, 313.
Erismatura rubida, 185.
Erithacus rubecula, 163.
Eudocimus albus, 321.
ruber, 321.
Euetheia bicolor, 96, 180, 181, 245.
grandior, 245.
olivacea, 7.
Eulampis holosericeus, 96.
jugularis, 96.
Euligia bartramia, 319.
Euphonia flavifrons, 95.
Eupsychortyx sonninii, 225.
Falcinellus erythrorhynchus, 322.
ordii, 322.
Falco æsalon, 345.
anatum, 43.
anthracinus, 42.
borealis, 39.
candicans, 63.
caribbærum, 96.
carolinensis, 38.
cayennensis, 38.
cheriway, 50.
columbarius, 12, 43, 91, 96, 103, 189, 241.

Falco communis, 43.
communis, var. anatum, 43.
dominicensis, 44.
forficatus, 46.
furcatus, 46.
hudsonius, 38.
isabellinus, 44.
latissimus, 40.
leucophrys, 45.
mexicanus, 91, 183.
noveboracensis, 44.
peregrinus, 43.
peregrinus anatum, 43, 91, 340.
richardsonii, 341.
rusticolus obsoletus, 75.
sparverioides, 45.
sparverius, 16, 43, 44, 103, 124, 128, 129, 189, 241, 338, 339.
sparverius dominicensis, 45.
sparverius isabellinus, 44, 45.
sparverius sparverioides, 45.
sparverius, var. dominicensis, 45.
(Tinnunculus) sparverioides, 45.
(Tinnunculus) sparverius, 44.
uncinatus, 48.
velox, 42.
vitticaudus, 48.
Falcon, Lanier, 341.
Peregrine, 340.
Prairie, 183.
Ferrari-Perez, F., notice of his catalogue of Mexican birds, 65.
Finch, Bachman's, 302.
California Purple, 196.
Cassin's Purple, 197.
Crimson House, 330.
Grass, 241, 259.
House, 197.
Lark, 133.
Pine, 199, 284.
Purple, 15, 103, 105, 212, 291.
Western Lark, 291.
Fishhawk, 275.
Flamingo, 72, 185.
Flicker, 191, 242, 264, 303, 329.
Red-shafted, 191.
Flint, W., the metric system, 357.
Florida cærulea, 326.
Flycatcher, Acadian, 303.
Arizona Crested, 17.
Ash-throated, 18, 192.
Baird's, 19, 329.
Coues's, 19.
Flycatcher, Great-crested, 192, 303.
Hammond's, 19, 193.
Least, 193.
Little, 19, 193.
Olivaceous, 18.
Olive-sided, 18, 192.
Scissor-tailed, 192.
Traill's, 9, 193.
Vermilion, 19.
Wright's, 19, 183, 193.
Yellow-bellied, 103, 104, 304.
Fox, W. H., *Vireo solitarius alticola* in Tennessee, 164.
Fregata aquila, 137, 139, 141, 180, 181, 214, 216, 219, 221, 222, 279, 281.
Fringilla montifringilla, 163.
oregona, 330.
Fulica americana, 185, 303.
Fulmar, Giant, 3.
Southern, 4.
Fulmarus glacialis glupischa, 87.
glacialoides, 4, 87.
Gadwall, 184.
Galeoscoptes carolinensis, 132, 181, 244, 297, 300.
Gallinago cælestis, 163.
delicata, 16, 96, 121, 185, 303, 337.
media wilsoni, 311.
wilsoni, 311.
Gallinula galeata, 72, 253.
Gallinule, Florida, 72, 253.
Gambetta flavipes, 317.
melanoleuca, 317.
Garzetta candidissima, 325.
Gavia alba, 339.
Gelochelidon nilotica, 133.
Geococcyx californianus, 190, 254.
Geothlypis agilis, 106.
formosa, 302.
macgillivrayi, 86, 296.
philadelphia, 106, 296.
restricta, 155.
trichas, 16, 132, 302.
trichas occidentalis, 296.
Geotrygon caniceps, 118.
cristata, 117.
martinica, 119.
montana, 96, 118.
mystacea, 96, 117.
sylvatica, 117.
Glottis melanoleuca, 317.
Gnatcatcher, Blue-gray, 133, 298, 301.
Godwit, Hudsonian, 341.
Goldfinch, 15, 264.
American, 105, 131, 197, 291.

Goldfinch, Arizona, 198.
Arkansas, 198, 291.
European, 339.
Lawrence's, 199.
Goney, 3.
Goodale, J. L., occurrence of *Calcarius ornatus* in Maine, 77; additional occurrences of the Connecticut Warbler in Maine, 77.
Goose, American White-fronted, 185.
Canada, 185.
Lesser Snow, 185.
Goshawk, Western, 183, 188.
Goss, N. S., additions to the catalogue of the birds of Kansas, 7; what constitutes a full set of eggs?, 167; *Merganser americanus* breeding in New Mexico, 344; *Ictinia mississippiensis* and *Ægialitis nivosa* nesting in southern central Kansas, 344.
Goura jamaicensis, 111.
Grackle, Boat-tailed, 346.
Bronzed, 131, 291, 302.
Purple, 69, 302.
Grebe, Carolina, 247.
Crested, 68.
Horned, 247.
Pied-billed, 8, 184.
Green, M. M., occurrence of *Phalaropus lobatus* at Syracuse, N. Y., 73; central New York notes, 350.
Grosbeak, Black-headed, 205, 293.
Blue, 205, 293, 296.
Cardinal, 302.
Evening, 196, 256, 257.
Pine, 13, 104, 212.
Rose-breasted, 15.
Grouse, Canada, 15, 103.
Pinnated, 340.
Ruffed, 15, 103, 129, 246, 338, 342.
Grus americanus, 185.
canadensis, 12, 264.
mexicana, 86, 141, 185.
Guara alba, 137, 138, 139, 141, 214, 279, 281, 283, 321.
rubra, 321.
Guillemot, Pigeon, 328.
Guiraca cærulea, 205, 293, 296.
cærulea eurhyncha, 336.
Gull, American Herring, 274.
Heermann's, 329.
Herring, 14.
Ivory, 339.
Laughing, 137, 139, 273, 274.
Ring-billed, 274.
Western, 329.
Gyrfalcon, 13, 341.
Black, 75.
Habia ludoviciana, 15, 16.
melanocephala, 205, 293.
Hæmatopus bachmani, 329.
palliatus, 230, 273.
Haliæëtus leucocephalus, 15, 16, 159, 189, 329, 339, 340, 341.
Harporhynchus bendirei, 68.
curvirostris palmeri, 68.
rufus, 78, 263, 300.
Harrier, Marsh, 188.
Hawk, American Sparrow, 129, 188.
Broad-winged, 66, 332.
Cooper's, 103, 188.
Harlan's, 304.
Harris's, 26.
Marsh, 246.
Pigeon, 103, 188, 241.
Red-shouldered, 188, 241.
Red-tailed, 241, 247.
Sharp-shinned, 103, 188, 264.
Short-tailed, 160.
Sparrow, 103, 338, 339.
Swainson's, 160, 189.
White-tailed, 26, 188.
Zone-tailed, 188.
Hay, O. P., the Red-headed Woodpecker a hoarder, 193.
Helinaia swainsoni, 37, 68, 263, 300, 305, 347.
Helminthophila, 307.
Helminthophila bachmani, 35, 165, 262, 308, 310, 348.
carbonata, 310.
celata, 37, 123, 296, 307, 309, 350.
celata lutescens, 93, 296, 307, 330.
chrysoptera, 308, 309, 310, 349.
lawrencei, 308, 310.
leucobronchialis, 308, 310, 348, 349.
luciæ, 307.
peregrina, 106, 296, 306, 307, 309, 352, 353.
pinus, 308, 309, 310, 348.
ruficapilla, 105, 307, 309.
ruficapilla gutturalis, 88, 295, 297.
virginiæ, 307.
Helmitherus vermivorus, 37, 128, 132, 305.
Hemipalama minor, 313.
semipalmata, 313.
Hen, Cape, 3.
Lesser Prairie, 187.
Prairie, 67.

Henshaw, H. W., the Lapland Longspur about Washington, D. C., 347.
Herodias cærulea, 326.
candidissima, 325.
egretta, 324.
luce, 324.
ludoviciana, 327.
occidentalis, 324.
pealii, 325.
rufescens, 325.
ruficollis, 327.
virescens, 326.
Heron, Great Blue, 185, 214, 219, 220, 281, 283, 329.
Green, 129, 280.
Little, 185.
Little Blue, 214, 281.
Little Green, 303.
Louisiana, 139, 214, 216, 280, 281, 282.
Night, 264, 281.
Snowy, 185, 214, 217, 222, 247, 281, 282.
Herpetotherus sociabilis, 47.
Hesperocichla nævia, 13, 86.
Heteractitis incanus, 87, 329.
Himantopus mexicanus, 87, 231.
nigricollis, 231.
Hirundo pacifica, 80.
riparia, 80.
rustica, 80.
urbica, 80.
Hummingbird, Black-chinned, 192.
Ruby-throated, 130, 191, 242, 303.
Rufous, 329.
Hummer, Black-chinned, 183.
Hydrochelidon nigra surinamensis, 184, 273, 282.
Hypomorphnus gundlachi, 42.
Hypomorphus gundlachi, 42.
Hypotriorchis columbarius, 43.
Hypsipetes pryeri, 250.
Ibis, Black Egyptian, 253.
Glossy, 97, 253.
White, 137, 138, 139, 141, 214, 279, 281, 283.
Ibis alba, 321.
falcinella, 97, 99, 100, 253, 321.
guarauna, 98, 100.
ordii, 98.
rubra, 321.
thalassina, 100.
Icoturus namiyei, 250.
Icteria virens, 132, 296, 302.
virens longicauda, 296.
Icterus bonana, 96.
Icterus bullocki, 23, 124, 290.
cucullatus nelsoni, 22, 23.
galbula, 246, 248, 256, 302.
lawrenceii, 178, 181.
parisorum, 22.
spurius, 290, 302.
Ictinia mississippiensis, 188, 344.
Jay, 213.
Jay, Arizona, 20.
Blue, 103, 104, 128, 130, 289, 303.
Canada, 103, 104, 256.
Island, 329.
Long-crested, 20.
Piñon, 21.
Woodhouse's, 20, 183, 290.
Jones, H. E., et al., notice of their 'Illustrations of the nests and eggs of birds of Ohio', 150.
Junco aikeni, 122, 123.
annectens, 122, 123, 200, 201.
caniceps 201, 202.
cinereus, 201.
cinereus dorsalis, 201, 202.
cinereus palliatus, 201, 202.
hyemalis, 13, 15, 16, 102, 103, 105, 122, 200, 201, 243, 244, 292, 331.
hyemalis carolinensis, 242, 243.
hyemalis connectens, 122.
hyemalis oregonus, 123, 125, 200, 201, 292, 330, 331.
hyemalis shufeldti, 330, 331.
oregonus, 122.
Junco, 102, 103.
Carolina, 242.
Oregon, 292.
Slate-colored, 15, 105, 292.
Kestril, American, 341.
Killdeer, 129, 186.
Kingbird, 15, 69, 130, 192, 303.
Akansas, 16, 192.
Cassin's, 17.
Gray, 141, 277.
Kingfisher, 14, 138, 275, 302.
Belted, 130, 190, 329.
Texan, 190.
Kinglet, Golden-crested, 245.
Golden-crowned, 15, 103, 107, 298, 350.
Ruby-crowned, 241, 298, 306.
Kite, Mississippi, 188, 344.
Swallow-tailed, 304.
White-tailed, 188.
Knot, 276, 278, 279.
Kumlien, L., the Merlin (*Falco æsalon*) in Greenland, 345.

LAGOPUS lagopus, 12.
Lampornis hendersoni, 177, 180.
Langdon, F. W., August birds of the Chilhowee Mountains, Tennessee, 125.
Lanius borealis, 13.
ludovicianus excubitorides, 77, 123, 294, 330.
ludovicianus gambeli, 336.
Lark, Desert Horned, 193.
Horned, 329, 347.
Meadow, 242, 290, 302, 342.
Mexican Horned, 20.
Prairie Horned, 255.
Sprague's, 65.
Western Meadow, 22, 290.
Lark-Sparrow, 241.
Larus argentatus smithsonianus, 14, 274.
atricilla, 137, 139, 222, 273, 274.
cachinnans, 86.
delawarensis, 274.
glaucus, 12.
heermanni, 329.
leucopterus, 12.
occidentalis, 329.
philadelphia, 12, 16.
Lawrence, G. N., the rediscovery of Bachman's Warbler, *Helminthophila bachmanni* (Aud.), in the United States, 35; additional specimens of Bachman's and Swainson's Warblers obtained by Mr. Chas. S. Galbraith in the spring of 1887, 262. See also Wells, J. G.
Lawrence, R. B., the Canadian Warbler breeding in Pike County, Pa., 349.
Leptodon uncinatus, 48.
Leptodon wilsoni, 47.
Leptoptila jamaicensis, 111.
Leucosticte australis, 257.
tephrocotis, 258.
Limnodramus griseus, 312.
Limosa fedoa, 316.
hæmastica, 316, 341.
hudsonica, 316.
scolopacea, 312.
Lloyd, W., birds of Tom Green and Concho Counties, Texas, 181, 289.
Longspur, Chestnut-collared, 199.
Lapland, 347.
McCown's, 291.
Loomis, L. M., on an addition to the ornithology of South Carolina, 76; remarks on four examples of the Yellow-throated Warbler from Chester County, S. C., 165; *Otocoris alpestris praticola* in Chester County, South Carolina, 255; another addition to the avifauna of South Carolina, 261; *Helinaia swainsonii* near Chester C. H., S. C., 347.
Loon, 184, 247.
Lophodytes cucullatus, 184.
Loxia curvirostra minor, 105, 242, 287.
curvirostra stricklandi, 197.
Loxigilla noctis, 95.
Lucas, F. A., notes of a bird catcher, 1; classification of the Macrochires, 170.
MACROCHIRES, 80, 170.
Macrorhamphus griseus, 185, 219, 279, 312.
scolopaceus, 312.
Macrotarsus nigricollis, 231.
Majaqueus æquinoctialis, 3.
Mallard, 184.
Margarops albiventris, 251.
densirostris, 95.
montanus, 95.
Marsh-tit, British, 64.
Martin, Purple, 131, 294, 302.
Maynard, C. J., notice of his descriptions of new birds from the Bahamas, 155.
McArthur, A., a bird scare, 351.
McIlwraith, T., notices of his 'Birds of Ontario', 255, 246.
Meadowlark, 76.
Megalestris skua, 158.
Megascops asio, 67, 128, 129.
asio maccallii, 190.
elegans, 250.
japonicus, 250.
Melanerpes aurifrons, 191.
carolinus, 191, 303.
erythrocephalus, 121, 130, 191, 193, 242, 303.
formicivorus, 194.
formicivorus bairdi, 345.
torquatus, 183, 191.
Meleagris gallopavo, 129, 340.
gallopavo mexicana, 186.
Melopelia leucoptera, 115, 116, 180.
Melospiza fasciata, 16, 105, 259, 260, 261, 293.
fasciata fallax, 203.
fasciata montana, 125, 204,
fasciata samuelis, 93.
georgiana, 16, 264, 293, 302.

Melospiza lincolni, 93, 125, 204, 293.
Merganser americanus, 184, 247, 344.
serrator, 12, 264.
Merganser, American, 184, 247, 344.
Hooded, 184.
Merlin, 335.
American, 341.
Merriam, C. H., another specimen of Bachman's Warbler (*Helminthophila bachmani*), 262.
Merula migratoria, 13, 15, 16, 67, 108, 133, 213, 245, 264, 298.
migratoria propinqua, 125, 298.
Micropalama himantopus, 186, 264, 312.
Micropus melanoleucus, 170.
Milvulus forficatus, 192.
Mimus gilvus, 95.
magnirostris, 178, 181.
polyglottus, 297, 300.
Minor Ornithological Publications, 66, 337.
Mniotilta varia, 15, 16, 128, 132, 181, 244, 295, 301, 353.
Mockingbird, 297, 300.
Molly-Hawk, 3.
Molly-Mawk, 3.
Molothrus æneus, 335.
ater, 241, 248, 264, 290.
ater obscurus, 22, 290.
Morphnus urubitinga, 42.
Morris, R. O., occurrence of the Florida Gallinule at Springfield, Mass., 72; the Double-crested Cormorant near Springfield, Mass., 253.
Murre, Brünnich's, 158.
Common, 158.
Myadestes townsendi, 86, 125, 169.
Myiadestes genibarbis, 95.
Myiarchus cinerascens, 18, 192.
coalei, 156.
crinitus, 192, 303.
lawrencei olivaceus, 18.
mexicanus magister, 17.
NAUCLERUS furcatus, 46.
Nisus cooperi var. gundlachi, 40.
fringilloides, 41.
fuscus, 41.
fuscus var. fringilloides, 41.
gundlachi, 40.
pileatus, 40.
Nighthawk, 15, 68, 130, 303.
Texan, 27, 191.
Western, 299.
Nonpareil, 290, 302.
Numenius borealis, 320.
hudsonicus, 264, 320.
Numenius longirostris, 186, 320.
tahitiensis, 12.
Numida meleagris, 223.
Nutcracker, Clarke's, 255, 256.
Nuthatch, Red-breasted, 107.
White-breasted, 133, 298.
Nyctala acadica, 67, 88, 161, 341.
Nyctea nyctea, 13, 341.
Nyctiardea violacea, 96.
Nycticorax nycticorax nævius, 136, 264, 281.
violaceus, 136, 281.
OCEANITES oceanicus, 68, 87, 341.
Oceanodroma leucorhoa, 68.
melania, 87.
Ochthodromus wilsonius, 229.
Ocniscus brunnescens, 327.
virescens, 327.
Œdicnemus dominicensis, 226.
Oidemia americana, 87.
perspicillata, 87.
Olor buccinator, 185.
columbianus, 12.
Olphe-Galliard, L., notice of his 'Contributions a la faune ornithologique de l'Europe Occidentale,' 336.
Oporornis agilis, 78.
Oreopeleia martinica, 119.
martinicana, 119.
Oriole, Arizona Hooded, 23.
Baltimore, 246, 248, 256, 302.
Bullock's, 23, 290.
Orchard, 290, 302.
Scott's, 22.
Oroscoptes montanus, 86, 297.
Ortalida ruficauda, 223.
Ortyx cubanensis, 224.
cubensis, 224.
sonninii, 225.
virginianus, 223, 224.
virginianus var. cubanensis, 224.
Osprey, 299.
American, 104, 189.
Ossifraga gigantea, 3.
Otocoris alpestris, 255, 347.
alpestris arenicola, 124, 193.
alpestris chrysolæma, 20, 124.
alpestris praticola, 255.
alpestris subsp. ?. 329.
Oven-bird, 132, 248, 296.
Owl, Acadian, 67.
American Barn, 189.
American Long-eared, 189.
Barn, 339.
Barred, 189, 277.
Burrowing, 189.

Owl, Great Horned, 67, 127, 129, 247.
Hawk, 13.
Saw-whet, 161.
Screech, 67, 129.
Short-eared, 189.
Snowy, 13, 341.
Texan Screech, 190.
Western Horned, 190.
Oxyechus vociferus, 228.
Oyster-catcher, American, 273.
Black, 329.
PANDION carolinensis, 38.
haliaëtus, 38.
haliaëtus carolinensis, 12, 38, 91, 104, 189, 275, 299.
ridgwayi, 155.
Parabuteo unicinctus harrisi, 26.
Parakeet, Carolina, 68, 303.
Pardalotus affinis, 249.
assimilis, 249.
ornatus, 249.
Paroquet, 257.
Partridge, Massena, 187.
Scaled, 187.
Parus atricapillus, 15, 16, 102, 107, 133, 298.
atricapillus occidentalis, 86.
atricapillus septentrionalis, 123.
atricristatus, 28, 298.
atricristatus castaneifrons, 28.
bicolor, 29, 30, 133, 245, 301.
bicolor texensis, 29.
britannicus, 65.
carolinensis, 133, 245, 298, 301.
gambeli, 88, 123, 125.
hudsonicus, 13, 15, 16, 102, 107, 261.
palustris dresseri, 64.
stoneyi, 336.
Passer domesticus, 60, 68, 131, 304, 338, 360.
Passerella iliaca, 13, 67.
iliaca unalaschkensis, 93.
Passerina amœna, 205.
ciris, 290, 293, 302.
cyanea, 131, 293, 302.
versicolor pulchra, 336.
Patagiœnas caribæa, 110.
corensis, 109.
leucocephala, 109.
Pelecanus californicus, 87, 329.
erythrorhynchus, 67, 184, 273, 274.
fuscus, 136, 137, 138, 139, 141, 215, 216, 218, 219, 222, 273, 279, 280, 281.
Pelican, Brown, 136, 137, 138, 139, 141, 215, 216, 218, 219, 222, 273, 279, 280, 281.
California Brown, 329.
White, 67, 184, 273, 274.
Pelidna pectoralis, 314.
pusilla, 313, 314.
schinzii, 314.
Perdix sonninii, 225.
Pericrocotus tegimæ, 250.
Perisoreus canadensis, 103, 104, 256.
canadensis fumifrons, 12.
Perissura carolinensis, 112.
Peristera jamaicensis, 111.
montana, 118.
Petrel, Leach's, 68.
Stormy, 5, 6.
Wilson's, 68.
Petrochelidon lunifrons, 15, 16, 123, 294, 304, 309.
Peucæa æstivalis bachmanii, 292, 302.
arizonæ, 336.
carpalis, 203.
cassini, 292.
mexicanus, 336.
ruficeps, 93.
ruficeps boucardi, 203.
Pewee, 247.
Western Wood, 19, 193.
Wood, 130, 192.
Phæbetria fuliginosa, 3.
Phainopepla nitens, 86.
Phalacrocorax dilophus, 253.
dilophus floridanus, 136, 141, 184, 215, 219, 274, 280, 281, 282.
pelagicus albociliatus, 93.
pelagicus resplendens, 329.
penicillatus, 329.
Phalænoptilus nuttalli, 86, 147, 148, 191.
nuttalli californicus, 336.
nuttalli nitidus, 147, 148.
Phalarope, Northern, 73, 78.
Wilson's, 8, 73, 185.
Phalaropus lobatus, 73, 78, 90.
tricolor, 8, 185.
Phillips, C. L., egg-laying extraordinary in *Colaptes auratus*, 346.
Philohela minor, 67, 73, 185, 241, 311.
Phœbe, 192.
Black, 18, 102, 329.
Say's, 18, 192.
Phœnicopterus ruber, 72, 185, 323.
Phyacophilus solitarius, 318.

Phyllopseustes borealis, 13.
Pica pica hudsonica, 124.
rustica, 62.
Picicorvus columbianus, 88, 255, 256, 341.
Picoides americanus, 104.
Picolaptes rikeri, 156.
Picus minor 62.
villosus, 303.
Pigeon, Cape, 4, 5, 6.
Passenger, 187.
Pindar, L. O., occurrence of the Evening Grosbeak in Fulton County, Kentucky, 257.
Pinicola enucleator, 14, 104, 212, 335.
enucleator canadensis, 335.
enucleator kadiaka, 336.
Pintail, 184.
Pipilo aberti, 204.
chlorurus, 204, 293.
erythrophthalmus, 131, 248, 293, 302.
fuscus mesoleucus, 123, 204, 293.
maculatus arcticus, 125, 264, 293.
maculatus megalonyx, 204, 264, 330.
Pipit, American, 297.
Sprague's, 297.
Piranga erythromelas, 131, 294, 304.
ludoviciana, 294.
rubra, 131, 294, 302.
rubra cooperi, 88.
rubriceps, 78.
Platalea ajaja, 322.
ajuga, 322.
Platt, F., notice of his 'List of the Birds of Meriden, Conn.,' 154.
Plectrophenax nivalis, 67.
nivalis townsendi, 336.
Plegadis autumnalis, 97, 253, 321.
falcinellus, 322.
guarauna, 100, 322.
Pleske, T., notice of his 'Uebersicht der Säugethiere und Vögel der Kola-Halbinsel,' 61.
Plover, American Golden, 78.
Black-bellied, 186, 218, 279.
Golden, 186.
Mountain, 186.
Snowy, 8, 60, 344.
Wilson's, 137, 274, 276.
Podicipes cristatus, 68.
Podilymbus podiceps, 8, 184.
Pœcilornis sparverioides, 45.
Pœcilornis sparverius, 44.
Polioptila cærulea, 7, 131, 295, 298, 301.
plumbea, 88.
Polyborus auduboni, 50.
brasiliensis, 50.
cheriway, 27, 50, 189, 222.
tharus, 50.
vulgaris, 50.
Poocætes gramineus, 241, 242, 247, 248, 259, 260, 291.
gramineus confinis, 86, 199, 259, 260, 291.
gramineus var. confinis, 260.
Poor-will, 191.
Frosted, 147.
Porzana carolina, 90, 185, 339.
noveboracensis, 247, 339.
Prion turtur, 1.
Progne cryptoleuca, 336.
subis, 131, 294, 302,
Protonotaria citrea, 37, 164, 304.
Ptycorhamphus aleuticus, 86, 93.
Publications received, 69, 156, 251, 342.
Puffinus auduboni, 181.
borealis, 71.
creatopus, 87.
major, 71.
stricklandi, 71, 87.
Pyrocephalus rubineus mexicanus, 19, 92.
Pyrrhuloxia sinuata, 204, 293, 347.
sinuata beckhami, 347.
sinuata peninsulæ, 347.
Pyrrhuloxia, Arizona, 347.
St. Lucas, 347.
Quail, Blue, 186, 187.
Florida, 283.
Migratory, 67.
Quiscalus inflexirostris, 96.
major, 277, 346.
purpureus, 69, 302.
quiscula, 131.
quiscula æneus, 201, 302, 303.
Ragsdale, G. H., change of winter habitat in the Grass Finch, 259.
Rail, Clapper, 344.
King, 299.
Sora, 185.
Virginia, 67.
Yellow, 247.
Rallus coryi, 155.
elegans, 299.
longirostris crepitans, 344.
obsoletus, 90.
virginianus, 16, 67, 90, 124.

Ralph, W. L., and Bagg, E., notice of their 'Annotated List of the Birds of Oneida County, N. Y.,' 154.
Raven, 15, 92, 188.
American, 21, 290, 329.
White-necked, 21, 290.
Recurvirostra americana. 185, 232.
Red-head, 184.
Redpoll, Southern, 32.
Redstart, 247, 297, 301, 353.
American, 132.
Black, 163.
Red-tail, Western, 188.
Redwing, 163.
Regerhinus uncinatus, 47, 48.
wilsoni, 47.
Regulus calendula, 123, 241, 298, 306.
satrapa, 15, 16, 103, 107, 245, 298, 306, 350.
satrapa olivaceus, 86.
Rhamphocinclus sanctæ-luciæ, 94.
Rhyacophilus solitarius, 318.
Rhyncophanes mccownii, 291.
Ricebird, 340, 360.
Ridgway, R., notice of his 'Description of a melanistic specimen of *Buteo latissimus* (Wils.),' 66; notice of his papers on the species of the genus *Empidonax*, 66; a singularly marked specimen of *Sphyrapicus thyroideus*, 75; notice of his 'Nomenclature of Colors for Naturalists, and Compendium of useful knowledge for Ornithologists,' 152; notice of his descriptions of new species of American birds, etc., 156; the Imperial Woodpecker (*Campephilus imperialis*) in Northern Sonora, 161; the Coppery-tailed Trogon (*Trogon ambiguus*) breeding in southern Arizona, 161; Clarke's Nutcracker (*Picicorvus columbianus*) in the Bristol Bay region, Alaska, 255; Clarke's Nutcracker from the Kowak River, Alaska, 256; Yellow-headed Blackbird (*Xanthocephalus xanthocephalus*) in Maine, 256; note on *Spizella monticola ochracea*, Brewst., 258; notice of his 'Manual of North American Birds,' 333; description of two new races of *Pyrrhuloxia sinuata* Bonap., 347; on the correct subspecific title of Baird's Wren (No. 719 *b*, A. O. U. Check List), 349.
Ridgway Ornithological Club, notice of 'Bulletin' of, 251.
Ring Ouzel, Alpine, 249.
Northern, 249.
Rives, W.C., Jr., Wilson's Phalarope in Rhode Island, 73.
Road-runner, 190.
Robin, 15, 67, 133, 163, 213, 245, 264, 298.
Western, 298.
Rosthramus sociabilis, 47.
Rostrhamus hamatus, 47.
sociabilis, 47.
uncinatus, 48.
Rough-leg, Ferrugineous, 189.
Rupornis magnirostris, 39.
ridgwayi, 38.
Rusticola minor, 311.
Ruticilla titys, 163.
Rynchops nigra, 137, 274.
Sage, J. H., another specimen of the Prothonotary Warbler in Massachusetts, 164; the Middletown, Conn., Glossy Ibis of 1850, 253.
Salpinctes obsoletus, 123, 297.
Saltator guadeloupensis, 95.
Sanderling, 276, 279, 350.
Sandpiper, Baird's, 186.
Bartramian, 186.
Black-bellied, 276.
Buff-breasted, 186.
Least, 186.
Pectoral, 186.
Red-backed, 276, 279.
Solitary, 129, 186, 241, 303.
Spotted, 14, 129, 186, 303, 340.
Stilt, 186.
Western, 186.
Sapsucker, Williamson's, 191.
Saunders, W. E., McIlwraith's 'Birds of Ontario,' 246.
Sayles, I., the sense of smell in *Cathartes aura*, 51.
Sayornis nigricans, 18, 192, 329.
phœbe, 192, 247, 264.
saya, 18, 192.
Sclater, P. L., notice of his catalogue of the Cœrebidæ, Tanagridæ and Icteridæ, 149.
Scolecophagus carolinus, 12, 15, 16, 264.
cyanocephalus, 23, 76, 124, 264, 291.

Scolopax alba, 321.
borealis, 320.
delicata, 311.
fedoa, 316.
flavipes, 317.
gallinago, 311.
grisea, 312.
hæmastica, 316.
melanoleucus, 317.
minor, 311.
semipalmata, 146, 316.
wilsoni, 311.
Scott, W. E. D., on the avi-fauna of Pinal County, with remarks on some birds of Pima and Gila Counties, Arizona, with annotations by J. A. Allen, 16, 196; some rare Florida birds, 133; the present condition of some of the bird rookeries of the Gulf coast of Florida, 135, 213, 273; another Bachman's Warbler in Florida, 348.
Seiurus aurocapillus, 132, 180, 248, 296, 301, 352, 253.
motacilla, 180, 248.
noveboracensis, 7, 13, 95, 180, 181, 248, 269, 306.
noveboracensis notabilis, 180.
Selasphorus floressii, 339.
Sennett, G. B., some undescribed plumages of North American birds, 24; descriptions of two new subspecies of Titmice from Texas, 28; observations in Western North Carolina mountains in 1886, 240.
Setophaga ruticilla, 16, 95, 132, 247, 297, 301, 353.
Shearwater, Cory's, 71.
Shoveller, 184.
Shrike, 77.
White-rumped, 294, 330.
Shufeldt, R. W., classification of the Macrochires, 80; notice of his list of his scientific writings, 155; the camera and field ornithology, 168; *Geococcyx californianus* — a correction, 254; individual variation in the skeletons of birds, and other matters, 265; notes on *Melanerpes formicivorus bairdi* in New Mexico, 345; the dermo-tensor patagii muscle, 353.
Sialia arctica, 125, 299.
mexicana, 125, 299.
sialis, 133, 211, 299, 301.
Siskin, Pine, 105.
Sitta amurensis clara, 249.
canadensis, 107, 269.
carolinensis, 133, 298.
pygmæa, 88.
Skimmer, Black, 137, 274.
Skua, Giant, 1.
Smith, H. M., the range of *Quiscalus major*, 346.
Snipe, 163.
Wilson's, 185, 303, 337.
Somateria dresseri, 341.
mollissima, 335.
mollissima borealis, 335.
Sparrow, Acadian Sharp-tailed, 233.
Bachman's, 292.
Baird's, 291.
Belding's Marsh, 251.
Bell's, 203.
Black-chinned, 200.
Black-throated, 202, 292.
Brewer's, 292.
Cassin's, 292.
Chipping, 15, 131, 292, 304.
Chippy, 247, 248.
Clay-colored, 200, 292.
Desert Song, 203.
English, 60, 68, 338, 360.
European House, 131, 304.
Field, 131, 248, 292, 304.
Fox, 67.
Grasshopper, 248, 304.
Harris's, 122, 291.
Henslow's, 350.
House, 360.
Intermediate, 200, 292.
Lincoln's, 204, 293.
Mountain Song, 204.
Rufous-winged, 203.
Savannah, 237, 259, 302.
Sharp-tailed, 232, 260.
Song, 105, 259, 260, 293.
Swamp, 239, 293, 302.
Texas Field, 292.
Tree, 122.
Vesper, 242, 247, 248, 291.
Western Chipping, 200, 292, 330.
Western Grasshopper, 199, 291.
Western Lark, 199.
Western Savanna, 199, 291.
Western Tree, 10, 299.
Western Vesper, 199, 291.
White-crowned, 200, 241, 292.
White-throated, 15, 67, 102, 103, 105, 122, 302.

Spatula clypeata, 184.
Speotyto cunicularia hypogæa, 190.
Sphyrapicus ruber, 91.
thyroideus, 75, 191.
varius, 16, 181, 242.
Spinus lawrencei, 199.
pinus, 88, 105, 124, 199, 284.
psaltria, 124, 198, 291.
psaltria arizonæ, 198.
psaltria mexicanus, 198.
tristis, 15, 16, 105, 124, 131, 197, 264, 291.
Spiza americana, 180, 205, 251, 294, 304.
Spizella atrigularis, 200.
breweri, 93, 292.
monticola, 11, 122, 258, 259.
monticola ochracea, 10, 12, 122, 258, 299.
pallida, 93, 200, 292.
pusilla, 131, 248, 259, 292, 304.
pusilla arenacea, 292.
socialis, 15, 16, 131, 247, 248, 264, 292, 304.
socialis arizonæ, 124, 200, 292, 295, 330.
Spoonbill, Roseate, 137, 138, 215, 274, 280, 281, 304.
Squatarola helvetica, 186, 228.
Starnœnas cyanocephala, 120.
Steganopus tricolor, 73.
Stejneger, L., further notes on the genus *Acanthis*, 30; notice of his paper on the Japanese Woodpeckers, 63; notice of his paper on the British Marsh-Tit, 64; notice of his paper, 'On *Brachyramphus perdix* and its nearest Allies' 65; supplementary notes on the genus *Acanthis*, 144; notice of his paper 'On the status of *Synthliboramphus wumizusume* as a North American bird,' 155; classification of the Macrochires, 170; notice of his paper on the species of *Pardalotus*, 249; notice of his paper on *Turdus alpestris* and *T. torquatus*, 249; notice of his review of Japanese birds, 249; the 'Proceedings' of the U. S. National Museum, 270.
Stelgidopteryx serripennis, 248, 302, 304.
Stercorarius parasiticus, 71.
pomarinus, 71.
Sterna anosthæta, 96.
antillarum, 138, 274, 276, 277
Sterna forsteri, 139, 274, 278, 279.
fuliginosa, 24.
havelli, 278.
hirundo, 274, 278, 350.
maxima, 137, 138, 139, 274, 278, 329.
paradisæa, 12, 14, 16.
sandvicensis acuflavida, 274, 276, 278, 279, 282.
Stone, W., a migration of Hawks at Germantown, Pa., 161.
Strepsilas interpres, 231, 276.
Strix pratincola, 189, 339.
Sturnella magna, 76, 242, 290, 302, 342.
magna neglecta, 22, 290.
neglecta, 124.
Sula piscator, 181.
Surnia ulula, 13.
Swallow, Bank, 15, 294.
Barn, 15, 294, 304, 309, 330.
Cliff, 15, 294, 304, 309.
Rough-winged, 248, 302.
Tree, 304.
Violet-green, 294.
White-bellied, 15.
Swan, Trumpeter, 185.
Swift, Chimney, 15, 104, 130, 303.
Sylvania canadensis, 102, 106, 128, 132, 269, 297, 349.
mitrata, 128, 132, 300, 305.
pusilla, 13, 16, 269, 297.
pusilla pileolata, 123.
Symphemia atlantica, 147.
semipalmata, 91, 137, 138, 145, 146, 147, 276, 316.
semipalmata inornata, 145, 146.
Synthliboramphus antiquus, 155.
wumizusume, 155.
Syrnium nebulosum, 189, 277.
nebulosum alleni, 190,
occidentale, 88.
TACHYCINETA bicolor, 13, 15, 16, 171, 304.
thalassina, 170, 171, 265, 294.
Tanager, Louisiana, 294.
Scarlet, 131, 294, 304.
Summer, 131, 294, 302.
Tantalus falcinellus, 321.
loculator, 90, 320.
mexicanus, 99, 253.
ruber, 321.
Tattler, Wandering, 329.
Teal, Blue-winged, 184.
Cinnamon, 184.
Green-winged, 184.
Tern, Arctic, 14.

Tern, Black, 184.
Cabot's, 274, 276, 278, 279.
Common, 350.
Forster's, 139, 278, 279.
Gull-billed, 133.
Least, 138, 276, 277.
Royal, 137, 138, 139, 329.
Sooty, 24.
Tetrao virginianus, 224.
Thalassoica antarctica, 4.
Thalurania bicolor, 96.
Thompson, E. E., occurrence of the Evening Grosbeak (*Coccothraustes vespertina*) at Toronto, Canada, 256.
Thorne, P. M., additions to Mr. Drew's list of the birds of Colorado, 264.
Thrasher, Bendire's, 68.
Brown, 300.
Palmer's, 68.
Sage, 297.
Thrush, Audubon's Hermit, 298.
Bicknell's 102, 103, 107.
Brown, 78, 263.
Dwarf Hermit, 298.
Golden-crowned, 301, 352, 353.
Gray-cheeked, 248, 306.
Hermit, 15, 102, 107, 108, 298, 306, 352, 353.
Missel, 163.
Olive-backed, 11, 102, 107, 248, 298.
Swainson's, 107.
Water, 306.
Wood, 78, 133, 263, 300.
Thryothorus albinucha, 350.
bairdi, 350.
bewicki, 265, 350.
bewicki bairdi, 297, 350.
bewickii leucogaster, 349.
bewickii murinus, 350.
bewickii spilurus, 330, 350.
bewickii var. leucogaster 349, 350.
ludovicianus, 133, 265, 297 301.
martinicensis, 95.
murinus, 350.
Thurber, E. C., *Helminthophila leucobronchialis* in New Jersey, 349.
Tinnunculus antillarum, 46.
carribœarum, 46.
dominicensis, 44.
isabellinus, 44.
leucophrys, 45.
Tinnunculus phalæna, 44.
sparverioides, 45.
sparverius, 44, 45.
sparverius var. antillarum, 46.
sparverius var. dominicensis, 45.
sparverius var. isabellinus, 44.
Titmouse, Black-crested, 28, 298.
Chestnut-fronted, 28.
Texan Tufted, 29.
Tufted, 133, 245, 301.
Todd, L. M., a Song Sparrow wintering in eastern Maine, 260; on the westerly trend of certain fall migrants in eastern Maine, 351.
Totanus chloropygius, 318.
crassirostris, 146, 147.
flavipes, 12, 16.
himantopus, 312.
longicauda, 319.
macularius, 318.
melanoleucus, 186, 317.
semipalmatus, 316.
solitarius, 91, 128, 129, 186, 241, 303, 318.
speculiferus, 147.
vociferus, 317.
Towhee, 131, 248, 293.
Arctic, 293.
Cañon, 293.
Green-tailed, 293.
Spurred, 330.
Townsend, C. H., list of the midsummer birds of the Kowak River, Northern Alaska, 11.
Treat, W. E., capture of three rare birds near Hartford, Conn., 78; *Xanthocephalus xanthocephalus* in Connecticut, 256; *Spizella pusilla* wintering near Hartford, Conn., 259.
Tree-duck, Black-bellied, 185.
Fulvous, 185.
Treron permagna, 250.
Tringa alpina, 186, 219.
alpina pacifica, 276, 279.
arenaria, 315.
autumnalis, 321.
bairdii, 186.
bonapartei, 315.
canutus, 88, 219, 276, 279, 315.
ferruginea, 315.
fuscicollis, 78, 314.
helvetica, 227.
himantopus, 312.

Tringa interpres, 231.
longicauda, 319.
macularia, 318.
maculata, 73, 96, 186, 314.
maculosa, 314.
maritima, 341.
minutilla, 12, 16, 186, 219, 313.
pectoralis, 314.
pusilla, 313, 314.
rufescens, 319.
schinzii, 314.
semipalmata, 313.
solitaria, 318.
squatarola, 227.
subruficollis, 319.
temminckii, 314.
wilsoni, 314.
Tringites rufescens, 319.
Tringoides bartramius, 319.
macularius, 318.
Trochilus alexandri, 86, 183, 192.
calliope, 88.
colubris, 130, 191, 242, 303.
costæ, 86.
rufus, 329.
Troglodytes aëdon, 306, 353.
aëdon parkmanii, 298.
hiemalis, 103, 106, 244.
hiemalis pacificus, 93.
leucogastra, 349.
parvulus, 163.
Trotter, S., the significance of certain phases in the genus *Helminthophila*, 307.
Tryngites subruficollis, 186, 319.
Turdus aliciæ, 13, 248, 261, 306.
aliciæ bicknelli, 102, 103, 107, 108, 261.
alpestris, 60, 249.
aonalaschkæ, 298.
aonalaschkæ auduboni, 124, 298.
aonalaschkæ pallasii, 15, 16, 102, 107, 108, 265, 298, 306, 352, 353.
fuscescens, 107, 265.
iliacus, 163.
mustelinus, 67, 78, 133, 263, 300.
swainsoni, 269.
torquatus, 60, 249.
ustulatus, 94.
ustulatus swainsonii, 11, 88, 102, 107, 108, 125, 248, 298.
viscivorus, 163.
Turkey, Mexican, 187.
Wild, 129, 340.
Turnstone, 276.
Black, 329.
Turtur leucoptera, 115.
risoria, 120.
Tympanuchus americanus, 340.
pallidicinctus, 187.
Tyrannus dominicensis, 7, 141, 277.
tyrannus, 15, 16, 69, 130, 180, 192, 303, 354, 356.
verticalis, 16, 122, 192.
vociferans, 17, 122.
Uria lomvia, 158.
troile californica, 86.
troille, 158.
Urinator adamsii, 12.
imber, 184, 247.
lumme, 12, 87.
Uropsila leucogastra, 350.
Urubitinga anthracina, 42.
Vanellus squatarolus, 227.
Vireo altiloquus barbatulus, 133, 216, 219.
approximans, 180.
atricapillus, 295.
belli, 93, 264, 295, 296.
calidris, 95.
calidris barbatulus, 7.
caymanensis, 7.
flavifrons, 131, 304.
flavifrons alticola, 128.
gilvus, 295, 302.
gilvus swainsoni, 336.
huttoni, 93.
noveboracensis, 132, 149, 181, 295, 302.
noveboracensis maynardi, 148.
olivaceus, 16, 102, 105, 131, 247, 264, 295, 302.
philadelphicus, 105.
solitarius, 164, 251.
solitarius alticola, 131, 164.
solitarius cassini, 88.
solitarius plumbeus, 88.
Vireo, Bell's, 295, 296.
Black-capped, 295.
Black-whiskered, 133, 216, 219.
Key West, 148.
Mountain Solitary, 131.
Red-eyed, 102, 105, 131, 247, 295, 302.
Warbling, 295, 302.
White-eyed, 132, 295, 302.
Yellow-throated, 131, 304.
Vireosylvia canescens, 178 181.
grandior, 180.
Vultur atratus, 51.

Vultur aura, 50.
Vulture, 303.
Black, 25, 188.
Turkey, 129, 188.
WARBLER, Audubon's, 296.
Bachman's, 35, 36, 165, 262, 263, 348.
Bay-breasted, 103, 106.
Black-and-white, 15, 128, 132, 295, 301.
Blackburnian, 103, 106, 128, 132, 183, 301.
Black-poll, 102, 103, 106, 248.
Black-throated Blue, 102, 106, 128, 132.
Black-throated Green, 15, 102, 106, 128, 132, 296.
Blue Golden-winged, 308.
Blue-winged Yellow, 308.
Blue Yellow-backed, 301.
Calaveras, 295.
Canadian, 102, 106, 128, 132, 297, 349.
Cape May, 221.
Cerulean, 128, 132, 296, 306.
Chestnut-sided, 128, 132, 306, 353.
Connecticut, 77, 106.
Golden, 297.
Golden-cheeked, 296.
Hooded, 128, 132, 300, 304.
Kentucky, 302.
Lutescent, 330.
Macgillivray's, 296.
Magnolia, 15.
Mourning, 106, 296.
Myrtle, 15, 296, 306.
Nashville, 105, 297.
Orange-crowned, 37, 296, 297, 350.
Pine, 132, 301.
Prairie, 133.
Prothonotary, 37, 164, 304.
Summer, 264.
Swainson's, 37, 68, 262, 263, 300, 305, 347.
Sycamore, 301.
Tennessee, 106, 263, 296, 306, 352, 353.
Townsend's, 183, 296, 297.
Western, 166.
Wilson's, 297.
Worm-eating, 37, 128, 132, 305.
Yellow, 296, 301.
Yellow Palm, 241.
Yellow-rumped, 103, 106.
Yellow-throated, 165.
Water-thrush, 248.
Louisiana, 248.
Waxwing, 259.
Cedar, 105, 131, 244, 294.
Wayne, A. T., *Phœnicopterus ruber* as a South Carolina bird, 72; the American Crossbill (*Loxia curvirostra minor*) in large numbers near Charleston, S.C., 287.
Webster, F. S., a fern-eating Woodcock, 73; capture of the Razor-billed Auk at Norfolk, Virginia, 158; the Saw-whet Owl in the District of Columbia, 161.
Wells, J. G., notice of his catalogue of the birds of Grenada, West Indies, 250.
Whip-poor-will, 191.
Whyte, J., object of the Shrike in impaling its prey, 77.
Willet, 137, 138, 145, 276.
Western, 145.
Woodcock, American, 67, 73, 185.
Woodpecker, American Three-toed, 104.
Downy, 104, 130, 190, 242, 303.
Gairdner's, 156.
Golden-winged, 66, 68.
Hairy, 104, 130, 242, 304.
Imperial, 161.
Ivory-billed, 68, 338.
Lewis's, 183, 191.
Nuttall's, 156, 251.
Pileated, 68, 104, 128, 130, 248.
Red-bellied, 191, 303.
Red-headed, 130, 191, 193, 242, 303.
Texan, 190.
Yellow-bellied, 242.
Yellow-naped, 191.
Wren, 163.
Baird's, 297, 349.
Bewick's, 349.
Cactus, 297.
Carolina, 133, 297, 301.
House, 306, 353.
Long-billed Marsh, 298.
Parkman's, 298.
Rock, 297.
Winter, 103, 106, 244.
XANTHOCEPHALUS xanthocephalus, 22, 256, 266, 267, 290, 356.
Xenopicus albolarvatus, 88.
YELLOW-LEGS, Greater, 186.
Yellow-throat, Maryland, 132, 239, 302.

Yellow-throat, Western, 296.
ZENAIDA amabilis, 113.
leucoptera, 116.
martinicana, 114.
montana, 119.
richardsoni, 7, 114.
rubripes, 115.
spadicea, 7, 114.
Zenaidura carolinensis, 112.
macroura, 112, 121, 129, 187, 264, 303, 329.
Zonotrichia albicollis, 15, 16, 67, 102, 103, 105, 122, 302.
intermedia, 12, 124, 200, 292.
leucophrys, 200, 241, 292.
querula, 122, 291.

ERRATA.

Page 57, last line, for "Professor Baird" read Mr. Ridgway.

" 128, last line, for "*Vireo flavifrons alticola*" read *Vireo solitarius alticola*.

" 138, line 13; page 142, line 8; page 143, line 5; page 215, line 14; and page 220, line 36, for "*A. ruficollis tricolor*" read *A. tricolor ruficollis*.

" 183, line 16 from bottom, for "about 240" read 253.

" 245, lines 13 and 16, for "*Euethia*" read *Euetheia*.

" 271, line 4 from bottom, for "Mrs. Robert E. Stuart" read Mrs. Robert L. Stuart.

" 276, footnote, for "page 22" read page 222.

" 318, line 10, for "*Phyacophilus*" read *Rhyacophilus*.

For other *Errata* see p. 284.

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